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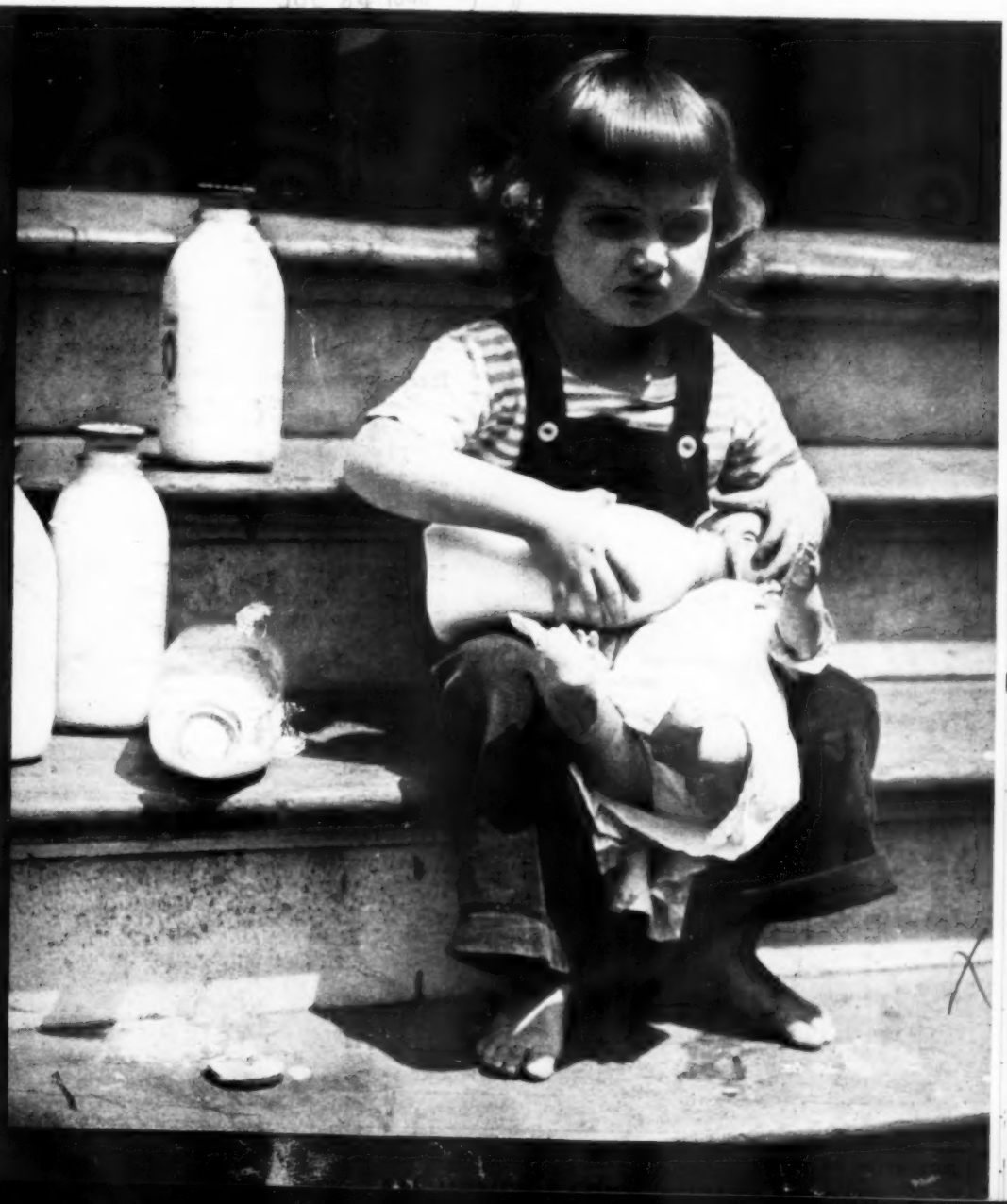

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# American MILK REVIEW

VOLUME 10 - - JULY 1948 - - NUMBER 7


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# SWORDS INTO P

*It is nearly three years since Hiroshima was shattered under the murderous hammer of the atomic bomb. As inevitably happens when men turn from the high emotions of war to the obscure and difficult problems of peace the bright visions of a brave new world, so real in that August of 1945, have receded before the actualities of power politics. And yet in spite of the threatening clouds there has been progress. Not the least advance has been achieved in the field of the returned veteran. In all recorded history there has never been any piece of veterans legislation quite the equal of the so-called G.I. bill. Believing that the time is appropriate to examine the operation of the Servicemen's Readjustment Act, the Editors of the American Milk Review discussed "on the job training" in the dairy industry with Veteran's Administration officials. The result is this authoritative article that should prove of value to dairymen and veterans alike.*

SINCE THE FAMOUS G.I. BILL WENT into effect at the close of the recent war a total of more than 1,273,000 men and women have participated in on-the-job training as provided under the Servicemen's Readjustment Act and Public Law 16. In December of 1947 nearly 1400 veterans were engaged in training programs in the dairy industry.

On-the-job training is authorized under two laws. The Servicemen's Readjustment Act popularly known as the G.I. bill is perhaps the best known. The other, Public Law 16 is similar but deals with disabled veterans.

In its simplest form on-the-job training is a system whereby a veteran learns a new job or skill while he is working. Obviously most employers can not afford to pay very high wages during the training period. In order that the veteran may have an income sufficient to enable him to undertake the program of training the Veteran's Administration supplements his pay. The administration also furnishes tools and equipment necessary for the training course. In return the veteran must adhere to a well thought out program that may last from three months to two years.

Thousands of employers in all fields have benefited from federal veterans' training programs. A number of industries have been able to overcome, to some extent, personnel shortages by utilizing veterans' training programs. Of course, the programs offer no magic formula for supplying industry and business with needed personnel, but many employers have told VA that they help.

Veterans themselves have benefited from the on-the-job training programs by the very fact that they were given the opportunity to train. Thousands of able bodied veterans who might not otherwise have been able to learn skills and trades owe their newly-found abilities to G.I. Bill job training. Other

THE TRANSITION FROM WAR . . .

thousands of disabled veterans, training under Public Law 16 have been given the opportunity to overcome their handicaps and to become self supporting productive citizens of their communities.

### Disabled Vets Prove Worth

One survey, conducted by VA in 1946, revealed that 66 percent of firms interviewed considered the disabled to be as efficient as physically normal workers, and 24 percent rated them better than average. The survey also established the fact that the handicapped had a lower accident rate, a lower rate of absenteeism and a lower labor turnover than the average worker.

The Disabled American Veterans conducted a nationwide survey of 1,000 manufacturers employing 330,000 in June, 1947. The survey showed:

1. Attendance: 48%, excellent; 38%, good; 10% fair; 4% poor.
2. Efficiency: 34%, excellent; 57% good; 6% fair; 4% poor.
3. Loyalty: 54% excellent; 40% good; 3% fair; 4% poor.

Many dairies are finding that it pays to train disabled veterans. George A. Oursler, president of the H. E. Koontz Creamery, Inc., in Baltimore, Md., wrote to VA in 1947, saying: "This is to advise you . . . Richard F. has been placed in charge of our G. plant and will assume all responsibilities of

# TO PLOWSHARES

. . . TO THE WAYS OF PEACE

that position. I wish to take this opportunity in complimenting the VA in affording Mr. F. the opportunity as a trainee. This, along with Mr. F.'s ability, has enabled him to qualify for this position."

As another example, Borden's Milk Company, Oklahoma City, Okla., employs five disabled veterans. Their occupations: accountant, superintendant of retail store in the plant, ice cream makers and retail salesmen.

According to a VA report, "Borden's experience on the employment of disabled veterans has been favorable and the company expects to continue with the (Public Law 16) training program."

### Setting Up a Training Program

Before a veteran can begin training in a dairy, two basic requirements must be met, one for the veteran, the other for the dairy. The veteran must obtain a certificate of eligibility and entitlement from VA before he can start training. The dairy must be approved by an appropriate State agency before it can offer a training program.

Here's the procedure a dairy must follow before it can accept veterans as job trainees under the G.I. Bill.

The initial step is to prepare an on-the-job training program that will be thorough enough to prepare a man for a particular job. The description of the program should cover the following six points:

1. The specific job objective for which the veteran is to be trained;
2. Length of time required for training;
3. Method of choosing veteran-trainees;
4. Rates of payment at the beginning of training, any step-ups in wages that might be given during the training period, and salary, after the program is completed;
5. A complete outline of just what the veteran will be taught during his training;
6. How the program will be administered.

Point No. 4 also should include entrance wages or salaries paid by the establishment to employees who already are trained in the kind of work for which the veteran is to be trained.

Point No. 5 should schedule the various operations for each major kind of work or task to be learned. The schedule should show for each kind of work or task the job operations, tasks to be performed, and approximate length of time to be spent on each operation or task. The number of hours of supplemental instructions required also should be given.

Companies in need of assistance in preparing their training programs can obtain help from State apprenticeship councils and from State approving agencies. VA regional offices also can aid by showing examples of approved programs.

The next step is to secure approval from the State approving agency which has been given the power to approve G.I. on-the-job training programs. Any VA regional office can inform a dairy where to apply for approval.

The application for approval must contain an agreement to supply VA with a monthly statement showing the attendance or work record of each trainee, and the amount paid him during the month.

### Requirements Are Uniform

Although details might vary from state to state, the G.I. Bill requires that approving agencies have uniform requirements for G.I. on-the-job training. Among them are these:

1. The training content of the program must be adequate to qualify a veteran for appointment to the job for which he is to be trained.

2. There is a reasonable certainty that the job for which the veteran is to be trained will be available to him at the end of the training period.

3. The job is one in which progression and appointment to the next higher classification are based upon skills learned through organized training on the job, and not on

such factors as length of service and normal turn-over.

4. The wages to be paid the veteran for each successive period of training are not less than those customarily paid in the establishment and in the community to a learner in the same job who is not a veteran. The wages must be in conformity with state and federal laws and applicable bargaining agreements.

5. The job customarily requires a period of full-time training of not less than three months and not more than two years. Recognized apprenticeships, however, may extend for as long as four years.

6. The length of the training period may be no longer than that customarily required by the establishment and other establishments in the community to provide the trainee with the required skills, arrange for the acquiring of job knowledge, technical information and other facts which the trainee will need to learn, in order to become competent on the job for which he is training.

7. Provisions must be made for related instructions for the individual veteran who may need it.

8. The establishment must have adequate space, equipment, instructional material and instructor personnel to provide satisfactory training on the job.

9. Adequate records must be kept to show the progress made by the veteran toward his job objective. A periodic report showing the conduct and progress made in the course of job training must be provided to VA.

10. Appropriate credit must be given the veteran for previous job experience, whether in military service or elsewhere. His beginning wage must be adjusted to the level to which such credit advances him, and his training period must be shortened accordingly. No course of training will be considered bona fide if given to a veteran who already is qualified by training and experience for the job objective.

11. A copy of the training program as approved by the state agency must be provided to the veteran and to VA by the employer.

12. When the veteran completes his training, he must be given a certificate by his employer indicating the length and type of training provided, and that the veteran has completed the course of training on-the-job satisfactorily.

The state agency will notify the dairy when the training plan has been approved. At that time, qualified veterans can be brought in to take part in it.

### The Disabled Veteran

The procedure for establishing an on-the-job training program for veterans with service-connected disabilities is similar to the procedure for setting up a G.I. Bill training program. The exception is that all arrangements are made with the VA regional office, instead of with the state approving agency.

The agreement provides that the following items must be made of record:

1. A detailed course of training to be offered, listing all the main subject headings that constitute the course. Under each heading must be listed all important job operations, skills and processes pertaining to it.

2. The approximate progressive wage schedule that will be in effect during the training period, including the beginning training wage and the entrance wage of a qualified fully-trained worker.

3. Specifications as to age, experience, intelligence, education, personal and physical limitations which the dairy has set up for the purpose of choosing qualified trainees.

4. The amount of institutional or related training, if any, required to supplement the on-the-job training.

Officials at any VA regional office will be glad to help an employer set up a Public Law 16 job training program. In addition, VA will provide the firm with qualified disabled veteran-trainees.

### Requirements for Veterans

An able bodied veteran must meet all three of the following requirements before he can train under the G.I. Bill:

1. Active military service some time between September 16, 1940, and July 25, 1947.

2. Ninety days or more of service, or if less than 90 days service, released because of a service-connected disability.

3. A release from active duty under conditions other than dishonorable.

The veteran may get training for a year plus a period equal to the time he served in the armed forces between September 16, 1940, and July 25, 1947. However, job training programs other than apprenticeships must last not less than three months nor more than two years. Regular apprentice programs, under supervision of State or Federal agencies, may last as long as four years.

In measuring periods of active service, a veteran must not count time in (1) Army Specialized Training Programs and Navy College Training Programs (V-12) if they were courses which were continuations of their civilian school courses; or (2) time in Military, Naval or Coast Guard Academies.

Veterans who enlisted or reenlisted under the Armed Forces Voluntary Recruitment Act (between October 6, 1945, and October 5, 1946), do count the entire period of their enlistment.

A veteran may decide upon any type or place of training, so long as the place is an establishment approved by an appropriate approving agency.

While the veteran is in training, VA furnishes him with tools and equipment necessary for the course, provided they are required of all other trainees taking the same course.

### VA Payments to Job Trainees

Veterans Administration payments to on-the-job trainees are made in addition to the wages he receives. If he has no dependents the veteran receives $65.00 a month; if he has one or more dependents the amount is increased to $90.00. The Veterans Administration is emphatic in pointing out that it does not intend that the veteran should receive more money as a trainee than he will receive when fully trained. Consequently deductions are made from the Veterans Administration payments when the veteran's wages reach a specified amount.

If a veteran's training wages are not over $145 a month if he has no dependents, $180 if he has one dependent, or $200 if he has more than one dependent, he will receive the full amount of subsistence allowance: $65 a month if he has no dependents or $90 if he has one or more dependents.

Any amount over $145, $180 or $200, as the case may be, will be deducted from his subsistence allowance. This does not mean there is a limit to the amount of wages he may receive as a trainee. It does mean he will not receive subsistence payments if his earnings equal or are larger than $210 a month if he has no dependents, $270 if he has one dependent, or $290 if he has more than one dependent.

Only wages for the standard work week, exclusive of overtime pay, are considered earned income in computing subsistence under the above ceilings.

A veteran may apply for training within four years from July 25, 1947, or within four years from discharge or separa-

*(Please Turn to Page 62)*

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Thirteen Thousand Farmers Comprise the Membership of Wisconsin's Pure Milk Products Cooperative

# STORY OF A CO-OP

*By* **ROBERT E. KOEHLER**

WISCONSIN'S PURE MILK PRODUCTS COOPERATIVE is an organization of farmers, run by farmers, for the benefits of farmers. That in a nutshell explains why this dairy group has become the largest strictly bargaining milk co-operative in the United States.

Its 13,000 active members include farmers with only several cows and producers with herds that number in the hundreds; many ship to city markets; some to condensaries; still others to cheese factories. But all believe in the principle of group action.

William O. Perdue, general manager of the co-operative, says that the broad objective of the organization since its founding in 1929 has been this:

"To help the dairy farmer gain a fairer share of the consumer's dollar principally through bargaining on his behalf with the buyers of milk."

He goes on to point out that as the co-operative nears its twentieth year it has two foremost specific aims:

"One is to reach the status where we actually will sell the milk of our members to the plants, rather than merely bargain for price. This would enable us to have a say on the price before the milk was delivered. Under present conditions, farmers deliver their milk and do not know what they will receive for it until later.

W. O. PERDUE

### Seek Federal Order

"The second objective is the establishment of a federal marketing order for evaporated milk, which would set a floor price under which buyers of milk to be canned could not go. This would be a valuable protection to the farmer and would in no way regulate him or his production."

The order would operate on a nation-wide basis and would give the farmer a voice through public hearings in determining his prices, Mr. Perdue comments. For the past six years, Pure Milk Products has campaigned for the evaporated order and has been joined by the Pure Milk Association, representing some 14,000 farmers in Wisconsin, Illinois, Indiana, and Michigan.

The Wisconsin co-operative has participated in other legislative campaigns. Some of the more recent results have been:

A federal marketing order for the Chicago market.

A federal directive which raised the pegged prices of butter and cheese, resulting in an increase of 13 cents in the floor price of milk sold to condensaries.

A "bonding law" in Wisconsin which requires that milk buyers furnish satisfactory proof of their financial ability to the Department of Markets.

In addition to the legislative phase of its program, Pure Milk Products gives its members six specific services:

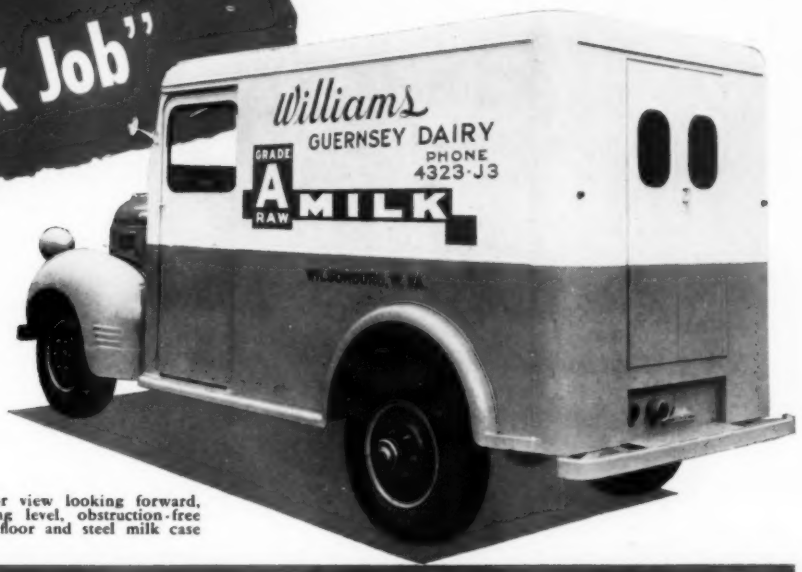
1. Bargains with the milk companies to which its members sell.
2. Publishes a monthly paper, the Pure Milk Products Press.
3. Provides benefit payments (up to 50 per cent of the market value of the milk produced) in case of loss of market due to contagious diseases in the home.
4. Furnishes the help of a staff of trained field men in meeting problems of production and sanitation.
5. Maintains a service for checking the tests of members' milk at the plants.
6. Provides low cost group hospital, surgical benefit policies for members, their families, their employees.

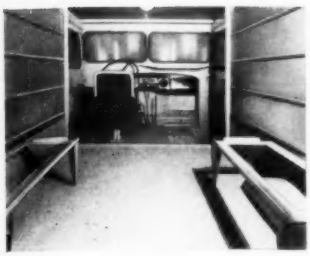
### Dues on Hundredweight Basis

How much does all this cost the members? There are dues, but as one farmer puts it. "Membership in Pure Milk doesn't cost – it pays." Members who sell to condensaries, cheese factories,

W. F. GROVES

# Everything you want in a "Milk Job"



Interior view looking forward, showing level, obstruction-free safety floor and steel milk case rack.

## SPECIFICATIONS

**SIZE:** For 1 ton chassis, 84" x 65", 54" high. For 1½ ton chassis, 96" x 65", 54" high.

**FRAMING:** Framing and sub-framing all-steel, electrically welded.

**FLOOR:** Driver's compartment, approx. 42" wide, on same level and integral with loading compartment. Has lidded openings for access to battery and master cylinder. Joined with loading compartment by 1" flange.

Loading compartment, safety floor, with steel racks over round wheel housings to hold standard milk cases.

**DOORS:** Rear: metal piano hinges, standard windows, rubber bumpers, 34" opening, dust-proof formed-in offset jambs.

Side: sliding type—lock open or closed. Large window openings. Sliding door locks and handles. Roller bearing hangers. Approx. 28" clear opening.

**CORNERS:** Rear corners of 4" radius, integral with rear panels and door posts. Front roof corners 6".

**SKIRTING:** 9" at sides.

**RUNNING BOARDS:** At bottom of skirt from cowl to rear fenders.

**STEP-WELLS:** Safety tread approx. 14" deep, integral with runningboards.

**FENDERS:** Special roll-type, heavy-duty. Replace standard fenders.

**REAR BUMPER:** 3" channel, slide-under type. Extends 6½"; covered with safety plate, fastened with heavy braces direct to chassis frame.

**DOME LIGHT:** One, with switch in ceiling behind driver's seat.

**ACCESSORIES:** Windshield wiper, rear-view mirror, bookshelf on right side of windshield.

**PAINT:** One color.

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The New Board of Directors in an informal pose. Left to right: C. J. Rode; Ronald Casey; Oscar Hunter; Charles A. Peterson; Edward R. Featherstone; Henry Meier; Fred F. Groves; Harry Heimann; William Bauman. Every member is a dirt farmer is Board's proudest boast.

or other manufacturing plants have dues of two cents per hundred-weight; producers on the Chicago market pay three cents per hundred-weight.

Dues are deducted from milk checks by the companies and are turned over to the co-operative. Refunds are made on a pro rata basis after operation costs has been paid and a reserve fund of $200,000 has been created.

For organizational purposes, the co-operative has divided Wisconsin into 11 districts. Members elect a representative from each section to serve on the board of directors, from which the officers are chosen. A state advisory board is also selected by the membership. The co-operative is further organized into local units, each with its own board and officers.

Strong leadership has characterized Pure Milk Products. Its president, William F. Groves, also heads the Wisconsin Dairy Federation. He is a director of the National Co-operative Milk Producers' Association and of the Wisconsin Council of Agriculture.

Mr. Perdue joined the organization in 1941. Previously he had supervised milk marketing programs in 10 Iowa and Illinois cities and had served on the board of directors of the Chicago Milk Foundation and the Central Grade A Co-operative.

A letter written by the general manager typifies the sincere interest in farmers' problems and the desire to cooperate on the part of Pure Milk leaders. A university student had written for information to be used in a research project in dairying. Mr. Perdue's reply opened:

"We are indeed proud to know that you are interested in the welfare of the farmers. Certainly farm people need more young men of your caliber to help in their cause."

The letter went on to list authorities in the field whom the young man could contact in the city in which he was located. Furthermore, Mr. Perdue himself wrote other groups who, in turn, sent material to the student. Pure Milk Products won another friend.

### Organization Has Grown

Since 1940 the co-operative has added almost 9,000 members. In the fiscal year ending last August, the group organized four new locals and began service to members at 14 new plants. It is affiliated with the National Co-operative Milk Producers' Federation, the Wisconsin Council of Agriculture, and the American Institute of Co-operation.

What about the future? This is what President Groves has to say:

"If the farmer is to assume his rightful place in the councils of the nation, he too must unite. He must have organizations that are capably run, responsible, and respected if he is to avoid a repetition of the disaster that befell agriculture after the first world war."

Pure Milk Products Co-operative answers that description.

## ASKS FLUID PRICE INCREASE

### Dairyman's League Head Cites Production Costs as Major Factor in Present Day Price Problem

WILLIAMSTOWN, N. Y.—Citing high costs of production and the present low milk supply, Henry H. Rathbun, president of the Dairymen's League Cooperative Association, declared recently, that "dairy farmers must receive further increases in fluid milk prices during the next few months if supplies are to be maintained at an adequate level.

"It isn't so much a question of farmers needing money as it is a question of insuring a sufficient supply of milk to meet consumers' needs," Rathbun told some 100 League members from Oswego County at a dinner meeting in the Grange Hall here.

Stressing the role of agriculture in the nation's economy, Rathbun said that "farmers are rendering a greater service to a greater number of people than any other industry by providing the foods which mean good health.

"The inability of some wage earners to secure a balanced diet is not the result of high costs of food," he pointed out. "It is the result of high federal, state and municipal taxes, for the sum cost of government takes a sizable portion of the worker's income.

"I don't say that critically," the League president continued, "but rather as a fact that the public should recognize."

Reiterating a plea for a return to the community level, Rathbun emphasized that "the future of agriculture and the nation must eventually be determined by the individual community. All members of the community must work together if the nation is to be assured of prosperity in the years ahead."

The League president commented on his organization's youth group, the Young Cooperators, saying that "we must instill in our youth a real pride in farming as a way of life. Our young people must be given an incentive to stay on the farm and to carry on agriculture and community living.

"To my mind," he concluded, "that represents the greatest challenge facing agriculture today. It is a challenge we can and will meet."

Rathbun was introduced at the meeting by Walker Rappleye, Oswego, president of League sub-district 12A of which Fred H. Sexauer, Auburn, is district director.

Entertainment was provided by the Young Cooperators in Oswego County, under the direction of Walter Ames, Jr., Caughdenoy.

# THE PEAKS AND VALLEYS

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# MORE MILK PER HOUR

## Dairy Barn Management Program at Cornell Is Comprehensive Effort Toward Increasing Efficiency of Production to Meet Rising Costs

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
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NO. 3 DAIRY BARN MANAGEMENT LETTER
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Dear Dairyman:
Once in a lifetime—that's how often most dairymen rearrange their dairy stables. If you want to save time—to make work easier—to provide for larger stalls to avoid injuries to the cows—or to add cows to your herd, this letter has an important message for you.
Draw up the plans for your dairy stable before you start the work. Make your mistakes on paper — not in concrete. Labor costs are high. Material costs are high. Planning carefully will make your dollars count double. A few minutes saved doing chores in a well-arranged barn each day means days and weeks of time saved every year.
This second letter in the series on dairy barn management was prepared by A. H. DeGolyer of Cornell's Agricultural Engineering Department. You might file it in the folder sent you as the first letter in this series. We'll be sending more information soon on how to develop the details of your floor plan, and on construction problems.
Sincerely yours,
County Agricultural Agent

**Literature distributed to farmers in connection with the barn management program is both plentiful and stimulating. The program is under the direction of the New York State and County Extension Services.**


***By* BETTY BURCH**

***Department of Extension Information***
***Cornell University***


THE NEW DAIRY BARN Management Program at Cornell is designed to help New York dairymen meet their most important problem—getting more production per man hour. It is a cooperative effort of all dairy interests in the state, directed by the State and County Extension Services.

The decision to concentrate work with dairymen on barn management for the next several months was based primarily on requests for such help from the dairymen to their county agricultural agents.

It was also influenced by the fact that the biggest share of labor in dairying is used in the barn. The average New York farmer spends about half his working time in the dairy barn. The Dairy Barn Management Program is aimed at helping him get more production from each hour of that time, to increase his percentage of profit and help him meet the cost-price squeeze.

The program puts the "divide and conquer" theory into constructive use. It divides the problem into parts which can be tackled one at a time.

Of the several related problems of management in the dairy barn, three stand out as most important in meeting the overall objective. They are reducing labor, reducing mastitis, and improving milk quality.

### Reducing Labor

The problem of reducing labor used was the most outstanding need, from the evidence at hand and from the interest of dairymen. The wartime labor shortage, highest farm wages in history, and the cost-price squeeze have made farmers more and more conscious of the need for highest possible labor efficiency.

Production per man hour in industry has increased more than three times in the last half century. Production per man hour on New York farms has not quite doubled in that time. On dairy farms, in fact, the increase in the amount



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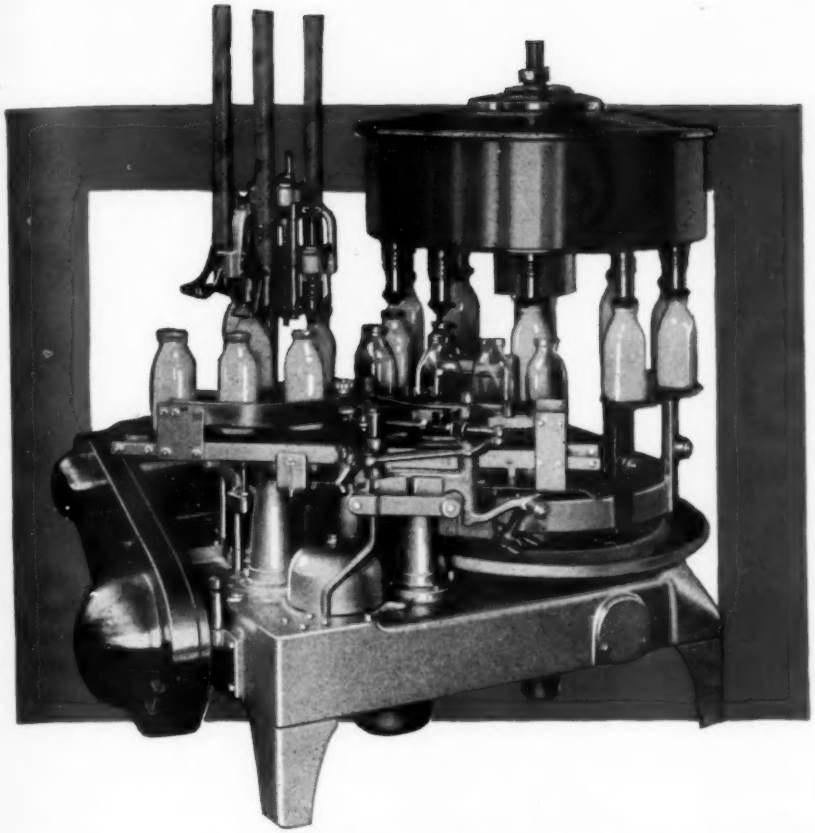

# The Nu-Line Filler-Capper

***Work Horse*** **Yes, the Nu-Line is a "work horse," a filler-capper built for the long pull . . . for staying on the job, maintaining high production schedules through years and years of operation. Thousands of installations of Nu-Line fillers of all sizes have proved their sturdiness, their simplicity in operation and maintenance, their ability to make any bottle-filling set-up more efficient, more economical, more satisfactory.**

***Watch Dog*** **Yes, a Nu-Line is a "watch dog" over filling losses. Nu-Line exclusive patented uniform filling valves fill to an exact pre-set level—always—without variation, to fill without spilling, to save valuable milk for you. Nu-Line savings can be figured exactly for your plant; next time you see him, ask your Cherry-Burrell representative.**

**The Nu-Line is also available as a Gra-Vac filler—a cost-saving filler which refuses to fill broken or chipped-lip bottles. Any Nu-Line filler may be easily converted to a Gra-Vac Machine. Ask your Cherry-Burrell representative.**

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*trendmaker in a great industry*

of milk per man hour has been less than has the amount of product per man on most other farms.

Long working hours on farms, as well as the competition between agriculture and industry for labor and the high cost of labor, emphasize the need for reducing labor.

**How?**

There are three major ways the program can help dairymen reduce labor in the dairy barn: arranging the barn layout to save time and walking; selecting and adapting equipment which will save time and labor; and developing work methods to save labor.

Labor saving methods may involve no cost at all, but simply eliminate unnecessary work or combine jobs. Group study of such problems can be most effective, since it is difficult to check one's own waste motions in habitual chores.

Inexpensive equipment often saves the most time and work. Extra brooms and shovels to put where they are used may save several minutes a day. Some equipment, such as feed carts—which save carrying as well as time and walking—may be made at home. Gutter cleaners cost more, but may be worthwhile to save backbreaking work.

Careful arrangement to save labor is probably most important in new construction. Arrangement can be planned for greatest convenience at no extra cost. In existing buildings, some storage facilities may be moved to more convenient places at little cost. Changes involving reconstruction may be fairly expensive, but many farmers have found that savings in time and labor offset their remodeling costs in a short time.

For example, Franklin Ufford, a 4-H club member of Pitcher, New York, saves 18 minutes and 816 feet of walking every day on feeding grain to his dairy herd, as a result of a rearrangement. He made a new grain storage bin with a chute to the stable, put in a feed carrier and track.

Harry Lusk in Monroe County made a rearrangement in his barn that saved two men an hour apiece each time they do the dairy barn chores. The changes allow use of grain and silage carts and a manure spreader.

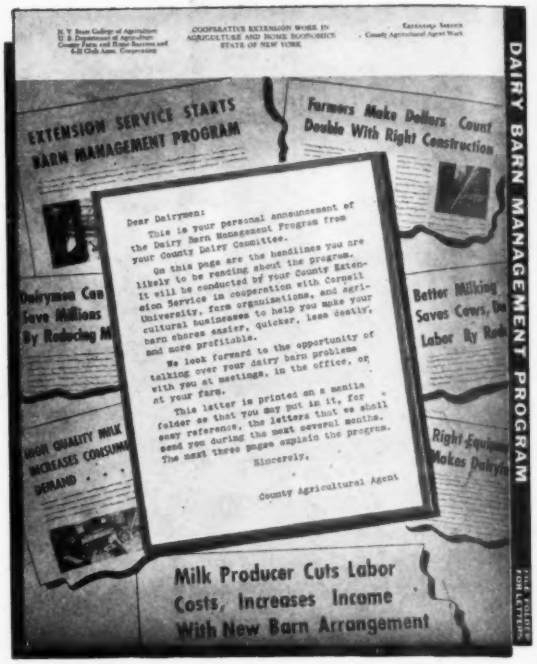
**Reducing Mastitis**

Mastitis is an important part of the problem of getting more production per man hour, because it reduces the cow's production and causes high and costly herd turnover. It wastes good cows, time, and feed.

Reports from mastitis control laboratories up to April 1, 1947, (covering 120 surveys of 88 herds with 3,680 cows) showed that 35 per cent of the cows in these herds had mastitis infection in one form or another. Wartime herd health surveys in 1941-42 of 32 townships in 8 counties showed that 17 per cent of the 1,523 dairymen who reported had serious udder and mastitis problems in their herds, and that 4 per cent of all cows (about one cow from each herd—or 60 to 70,000 cows in the State) were sold each year on account of udder troubles. Dairy Herd Improvement Association records for 1944-45 also indicated the same proportion of cows sold in that year for the same reason.

**Control**

Plans for helping dairymen reduce mastitis include both prevention and control.


COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS STATE OF NEW YORK
EXTENSION SERVICE STARTS BARN MANAGEMENT PROGRAM
Farmers Make Dollars Count Double With Right Construction
Dear Dairymen:
This is your personal announcement of the Dairy Barn Management Program from your County Dairy Committee.
On this page are the headlines you are likely to be reading about the program. It will be conducted by your County Extension Service in cooperation with Cornell University, farm organizations, and agricultural businesses to help you make your barn chores easier, quicker, less costly, and more profitable.
We look forward to the opportunity of talking over your dairy barn problems with you at meetings, in the office, or at your farm.
This letter is printed on a manila folder so that you may put in it, for easy reference, the letters that we shall send you during the next several months. The next three pages explain the program.
Sincerely,
County Agricultural Agent
Better Milking Saves Cows, Labor By Re
Right Equipment Makes Dairying
HIGH QUALITY MILK INCREASES CONSUMER DEMAND
Milk Producer Cuts Labor Costs, Increases Income With New Barn Arrangement
DAIRY BARN MANAGEMENT PROGRAM

**First letter to dairymen was on stiff manila folder type paper. Farmers were encouraged to use it as file for subsequent material.**

The program will present information on segregation and treatment of infected cows, and on management and handling of cows and equipment to prevent spread of mastitis.

Udder injuries are a common cause of mastitis. Measures to prevent such injuries include proper construction and size of stalls, adequate bedding, and better milking, particularly with machines.

Since cow comfort directly affects milk production, the improvement of stalls and bedding can also be expected to increase milk production.

Wyatt Wilson of Genoa says a 17-year-old cow in his herd increased her butterfat production 100 pounds the year after he moved her to a large new stall. There was no change in her feed or other conditions, except that she was more comfortable. The cow also lost her stiffness. Mr. Wilson says there were similar increases in production from other cows in the new barn, and mastitis decreased.

Bernard Potter of Truxton remodeled—made stalls longer and wider, moved posts to make room, and put in concrete curb partitions. He's well pleased with the result, says "Milk production has increased tremendously and I've had hardly any mastitis."

On the other side of the picture, a couple of farmers have reported that they had to sell some of the biggest and best cows they owned, because they couldn't build stalls big enough to accommodate them in their present stables.

**Quality**

Improving milk quality has two important effects for dairymen—it prevents rejections of milk already produced, and it encourages consumers to keep using plenty of milk and maintain the market.

Continued high consumer demand for fluid milk and cream depends upon the availability of a safe, clean, fine-flavored product. Proper barn management practices go far toward eliminating milk of poor odor and flavor.

Last year New York City alone rejected 3 million quarts of milk because the quality was poor—a loss which added considerably to production costs. Sediment and bacteria in milk must be kept at a minimum through proper handling and cleaning of cows and equipment.

Points in the program to help dairymen improve milk quality include better milkings, proper cooling of milk, sediment control, kind and use of utensils, cleaners and sterilizers, good water supply, proper bedding, mastitis control, and fly control.

The new program has not progressed far enough yet to show just how much progress can be made on improving quality, but it surely can help.

**Begin with Building**

Work on construction problems was chosen as the starting point on the three-pronged program, because it has an important bearing on all three objec-

*(Please turn to Page 68)*



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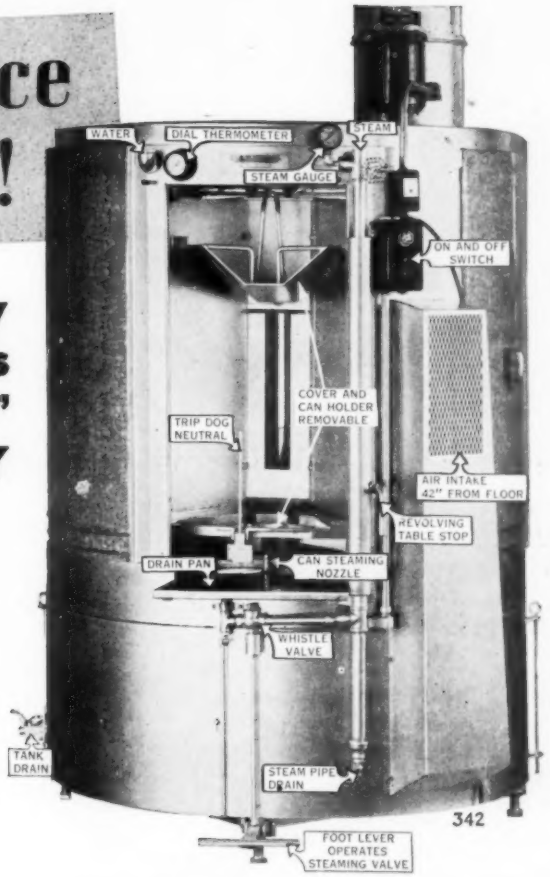
# Make Floor Space More Profitable!

## Get Big-Washer Efficiency into 4′ 4″ Space with this DAMROW TYPE "J" ROTARY




Above — Type "J" 52" diameter, with cover holder above cans. Type "K" 62" diameter provides for linked covers at side of cans.

Draw a circle 52" in diameter — that's all the floor space you need for the compact, modern DAMROW Type "J" Rotary Can Washer. And in this space you get remarkable washing efficiency . . . at least *six* thorough stages including famous Damrow FORCED COLD AIR DRYING, and many unique features of construction and operation. You'll wash up to 240 cans and covers per hour — milk cans, pails, ice cream containers, carrying cans, even large neck gallon bottles; in fact anything that will stand on end and is heavy enough to stay on against the force of water and steam. This versatility makes the DAMROW Type "J" particularly profitable in any plant.

You get features like these in the Damrow Type "J" — solid steam plates, "No-Jam" clutch, unique Geneva movement drive, dial steam pressure gauge, dial thermometer for solution wash, vent fan, automatic float valve, thermal overload switch—and others that prove higher value at surprisingly low price.

Be SURE to check the DAMROW ROTARY Can Washer when you want highest washing efficiency in smallest floor space — for cleaner, sweeter, drier cans that protect milk quality.

**Return the Coupon TODAY for Complete Details . . .**

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**Please send me literature and prices on space-saving, efficient DAMROW ROTARY CAN WASHERS.**

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# The MILK INDUSTRY FOUNDATION

**Expanding Membership and Wider Service Mark Four Decades of Growth By Outstanding Dairy Industry Association**

WITH A MEMBERSHIP LIST including leading milk distributors in every state, the District of Columbia, Hawaii, Canada, England, Australia and Argentina the Milk Industry Foundation program for wider industry service is moving rapidly ahead.

New activities are providing members extensive and much needed assistance on common problems that have become more intensified in the complex economic world faced by the milk industry today. Within the last few years milk company executives have had to become familiar with questions that the old time milk dealer never faced.

As the business pace increased in tempo and the need for knowledge on many more subjects became a daily occurence, dependence of industry executives on association service and information became a necessity and a matter of economy.

The tremendous changes in the fluid milk distributing industry led to the merger of the International Association of Milk Dealers with the Foundation two years ago. This merger provided members with services that could not be made available by either of the organizations alone and produced a widening support for the single industry association.

The increasing importance of consumer, farmer and labor relations means more demands on the national program and more cooperation with state and local groups. Thus, the extent of association work covers a much wider range of activities than ever contemplated in the old days.

### Formed Forty Years Ago

When the association was organized forty years ago, it was more or less a social group. It gradually developed into a trade association as the modern milk distributing industry grew with a code of ethics and objectives to produce and distribute the highest quality products.

In those early days quality and sanitation were probably the outstanding problems. As knowledge of milk sanitation spread and the distributing branch of the industry embraced pasteurization and other measures for consumer protection, economic problems of the current type were not outstanding.

As cities grew the system of milk supply and distribution came to demand a high order of management and business knowledge. The transition from a man driving a milk wagon from farm to city to a full fledged industrial operation changed the picture.

Milk also was a farm product reaching the city consumer in many forms. This use of milk for so many products no longer made on the farm or at home brought economic problems that were forerunners of today's industry which must cope with local, state, and governmental controls of many kinds.

Another factor was the growing interest of consumers in the business of producing and distributing food. This made it imperative for the milk industry, as well as other businesses, to keep consumers informed.

Forward looking leaders helped organize the Milk Industry Foundation more than 10 years ago to carry on economic, educational and public relations programs. This work has been very successful with a limited budget.

As the country got into war and more complicated economic problems developed, the Foundation was called upon to take on more responsibility in helping the industry

F. H. KULLMAN, JR.
President

COL. B. F. CASTLE
Executive Secretary

Officers of the Milk Industry Foundation are elected each year at the Annual Convention.

T. K. HAMILTON
Vice-President

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cope with these problems. At the same time many of the original objectives with which the national association was concerned had been accomplished to a great extent, particularly with respect to sanitation and accounting, organization and other problems.

### Original Name Caused Confusion

The name of the older organization also caused confusion. In many places the milk dealer was taken to mean a person who operated a milk store. The word "international" in the name also developed political connotations.

Any member of the industry who believes in the American system of milk supply and distribution and who wants to keep in touch with the rapidly changing times cannot fail to be part of this new and strengthened trade grouping.

The services to members of the enlarged Milk Industry Foundation include all of the trade association activities formerly provided I. A. M. D. members plus the Washington representation, the national and local public relations activities, sales training, literature, news releases, films, convention, research and others.

Every milk distributor is affected by what goes on in Washington today. Regulations, new rulings, new laws, new decisions and personnel changes mean that industry representation, interpretation and assistance on the ground are a paying investment for your business. The Washington office of the Foundation is in continuous touch with the complex activities of the Federal Government—activities that affect every part of the business of milk distribution.

Special Washington services range from the handling of individual requests from members to the completion of important industry programs connected with the Department of Agriculture and the many other government or industry organizations.

### Contact With Federal Government

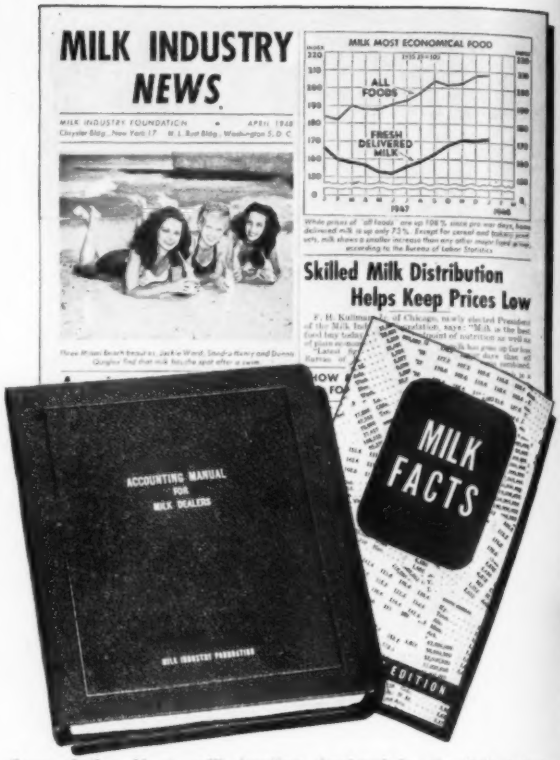
From its Washington, D. C., headquarters, Colonel B. F. Castle, the Foundation's executive director, is the fluid milk industry's point of contact with the complex structure of the federal government. Today almost every government department has some relationship with the milk industry. One of the greatest accomplishments of the fluid milk industry was the development, supply and distribution of millions of quarts of milk daily to our military forces. Colonel Castle is a former regular Army officer of wide business experience who has an extensive knowledge of Washington.

The Washington office also handles many trade activities and plans for the annual convention. E. B. Kellogg, secretary, was assistant secretary of the International Association of Milk Dealers, before the merger with the Foundation. He has had a long experience in association work. A graduate of the University of Wisconsin before entering association work, Mr. Kellogg was also the owner and operator of a dairy farm on which he gained first-hand experience with milk supply and its distribution.

### Public Relations Program

The Public Relations program of the Foundation which has been carried on continuously for 10 years from the New York office includes activities that are widely known and have achieved unusual prestige and acceptance. Some of the principal Public Relations activities include the factual news releases to press and publications throughout the nation, which make possible an understanding of industry activities and problems.

From the New York Office under the direction of Charles Speaks, Director of Information, consumers, educators, editors, writers, economists, industry members and others are supplied with factual information about the milk industry and its




**Some of the aids to milk handlers developed by the Milk Industry Foundation are the Milk Industry News, the booklet Milk Facts, and the new Accounting Manual.**

operations. Mr. Speaks is a former newspaper and magazine writer and editor, and an Associated Press editor who had worked on important national public relations accounts before joining the milk industry.

Distribution of motion pictures by loans, sales and showings through film libraries reach widespread audiences. News, technical and operations photographs pertaining to milk supply and distribution are made, collected and disseminated.

Through booklets, leaflets, pamphlets and other literature the economics of milk supply and distribution and other vital subjects are available to press, magazines, editors and writers, educators, economists, libraries.

Material, ideas, suggestions, statistics and data are supplied to radio stations, radio directors, industry companies and other organizations.

Foundation material is based on data obtained through research and reference. Continuing studies are carried on and special reports made on subjects of vital interest. Many industry committees and groups have based activities on research and reference data prepared by the Milk Industry Foundation.

Requests for Milk Industry Foundation material are received from every state in the Union and many foreign countries.

An example of the value to the industry of the Milk Industry Foundation is offered by the post-war every-other-day delivery program. As farm prices, wages and supplies skyrocketed leaders in the industry saw that distributors could not continue on the old daily delivery basis. The fine Public Relations program of the Milk Industry Foundation, according to industry opinion, was vital in making the public, the industry and farmers aware of all the facts in the case.

The Annual Convention is another one of the outstanding services to members. At the convention the general sessions and the sectional meetings make up an educational con-

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MILK REVIEW


# New Solco Hits New High!

**SOLCO** is a malt-chocolate flavored health food drink, mixed at the dairy with whole milk and distributed in standard milk bottles. For this reason Solco has too often been confused with chocolate drinks. Solco is a health food drink, superior, less expensive and more convenient than powdered formulas, sold in such large volume through drug and grocery stores for mixing in the home. You can convert the established demand for food drinks to your dairy. Offer Solco to your customers and enjoy your share of the profits in this huge food drink market . . . a market without the broad seasonal fluctuations so common to chocolate milks or drinks.

# *Now better than Prewar!*

The new Solco Food Drink surpasses prewar standards, tastes absolutely wonderful, always calls for a second round, always calls for the biggest, fattest glass on the shelf. Prove it to yourself. *Get a free sample today.* Everyone is talking about malt-chocolate flavored Solco. The new Solco is a new sales-getter. The new Solco is hitting a new high.

If you are beginning to sense a return to rough and tumble selling, get chummy with Solco. Get acquainted with the food drink idea. Solco offers you a merchandising plan to help you hold old customers and open the door to new customers. It's a plan . . . not just another product. *Write today for your Solco sample and the amazing facts about the food drink market.*

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clave covering the problems of the milk industry. Large and small milk companies are represented with group leaders drawn from experienced plant managers, sales managers, public relations and advertising executives, controllers, accountants, laboratory specialists, production managers. Each year the convention brings the greatest gathering of industry leaders together to take part in the discussions. Many milk company executives have repeatedly stated that the Annual Convention is well worth a membership in the association.

Few industries have such new and complete sales training as the Milk Industry Foundation's Balanced Job Program. It embraces specialized sales training for retail routemen, for wholesale routemen, and for supervisors. The program was developed with the aid of well-known sales experts in the industry and is available for members. With the return of competition to the fluid milk industry, the Foundation's training program is in great demand. The sales training course—known as the Balanced Job—was prepared after intensive surveys and study by trained observers who rode the milk routes of starred salesmen for three months. All of the best ideas obtained from coast to coast were incorporated into the course.

"Milk Industry News" goes to executives throughout the industry, to newspapers, magazines and opinion leaders. It has much to do with spreading public awareness of the economics of milk production and distribution.

"Milk Facts" is the widely circulated annual compilation of milk statistics used by the industry and publications, libraries, students, editors, throughout the world.

An important objective of the enlarged Foundation is that of winning the confidence of millions of dairy farmers.

Among other well-known Foundation activities are the Annual Pasteur Medal Awards for employees' heroic or distinguished services. Before the Pasteur Medals were established 10 years ago not even the people in the milk industry were aware of the extent of these heroic services by milkmen and other workers.

### The Story on Profits

One of the outstanding industry problems from the public relations standpoint is that of informing consumers, producers and employees on fluid milk profits. The Milk Industry Foundation decided to get the facts and asked the University of Indiana to examine the figures of more than 244 milk companies in 37 states. The study showed that the farmer and labor together receive more than 80c out of every dollar the distributor receives. With less than 20c left, the distributor must pay delivery, plant equipment, fuel, bottles, cans, cases, caps, insurance, taxes, depreciation, and a host of other items. Also any net profit must come out of this portion and profits of 2 cents or less on the sales dollar mean only a small fraction of a cent per quart.

The Foundation quotes figures showing that net profits after taxes per sales dollar puts milk companies at the bottom in profits. Leading milk companies make about 1c net compared to more than 3c for department stores, more than 4c for bakeries, 5c for other food products, and more than 8c for drug and soap companies in cents per sales dollar. Those figures have helped highlight the fact that milk distribution in this country today serves so many people so economically.

In addition to publicizing the figures nationally, the Foundation urges every milk dealer to improve consumer knowledge by including in advertising, booklets or radio programs the facts about profits to help correct misconceptions regarding the distributors share of the dollar.

### "Milk Is the Best Buy"

The Foundation has also publicized important information to prove that despite the tremendous increases in the prices paid to farmers for milk and increases in wages to labor, the distributor has been able to sell milk on a basis which makes it a much better buy than almost any other food.

U. S. Government figures showing that home-delivered fresh milk has gone up much less than the "all foods" average, have been put in the hands of millions of people by the Milk Industry Foundation. The latest figures indicate that the "all foods" index stands at 202 using the 1935-1939 period as 100, while home-delivered milk stands at 174. This means that the prices of the principal foods generally included in the family market basket have gone up in price a lot more than milk.

The Milk Industry Foundation has also made many consumer polls. A recent one that has been widely quoted shows that housewives consider fresh milk the most important in a long list of foods used in the average home. More than 71% of the housewives interviewed said that milk is the last of all the foods they would cut down on during inflationary price periods.


***Don't Miss The Next Issue***

The August issue of the American Milk Review will carry the complete story of a sensational new development in the dairy industry.

Tank truck pick up of milk at the farm has been practiced for some time in California where large herds are common. But the application of this technique to small ten, fifteen, twenty can producers **IS NEW.**

Developed by a leading Eastern Dairy the system is already in the process of field testing. The story of producer reaction, equipment, quality improvement, and quality control in relation to this new system will be told next month.

Other important articles which every milk handler will want to read, deal with glass bottles from A to izzard; an authoritative story on the baffling series of milk price investigations that are sweeping the country; how milk is handled in a jail house, and a host of other worthwhile pieces.

***Watch for that August issue***


At the Miami Beach convention, October 30-November 1, 1947, F. H. Kullman, Jr., vice president of Bowman Dairy Company of Chicago, was elected president of the Milk Industry Foundation and T. Kline Hamilton, executive vice president of the Diamond Milk Products Company of Columbus, was elected vice president. E. N. Brawner, president of Chestnut Farms-Chevy Chase Dairy, Washington, D. C., is treasurer.

The Board of Directors of the Milk Industry Foundation includes F. Bruce Baldwin, Jr., Baldwin Dairies, Inc., Philadelphia; G. W. Barber, Barber Pure Milk Co., Birmingham, Alabama; Bryan Blalock, The Borden Company, Marshall, Texas; J. H. Duplan, Silverwood Dairies, London, Ontario; H. P. Hood, H. P. Hood & Sons, Inc., Boston; T. D. Lewis, Arden Farms Co., Los Angeles; A. G. Marcus, Dairymen's Association, Ltd., Honolulu; W. H. Marcussen, The Borden Company, New York; C. B. Martin, Durham Dairy Products, Inc., Durham, N. C.; A. C. Merrill, Cloverleaf Dairy, Salt Lake City; Alfred R. Nielsen, Alfar Creamery Co., West Palm Beach, Florida; W. C. Riedel, Sanitary Farm Dairies, Inc., St. Paul, Minn.; Raymond Skinner, Forest Hill Dairy, Memphis, Tenn.; and E. E. Stewart, National Dairy Products Corp., New York.

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Sanitary fittings carried in all standard sizes from 1″ through 4″. Quotations on special sizes or materials gladly furnished.

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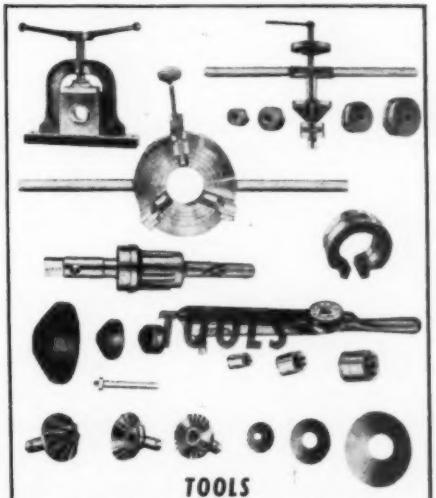


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AND SANITARY FITTINGS TO MEET YOUR NEEDS

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*Milk*

Typical of the rugged vessels that ply the Great Lakes is this bluff bowed freighter.

# SAILS ON THE GREAT LAKES

*By* **ETHELYN WELLER**

WHEN WE LOOK OFF OVER a great lake and see a huge freighter plowing steadily along through the water we may not think that such a craft is actually a small floating city. These ships, which sail the Great Lakes from early spring until late fall are often away from port for three or four days at a time and so must carry everything necessary for man and boat during that entire time. Among the most important food items so stocked are dairy products—milk, cream, buttermilk, butter, cottage cheese, chocolate milk, ice cream and eggs.

These boats carry a crew of from 36 to 42 men, five of whom are in the galley, and all are served the best of food at every meal. These meals consist of breakfast at 7:30, a lunch at 9:30, dinner at 11:30, another lunch at 2:30 and supper at 5:30. In addition, the galley is left open all night for men on duty during these hours.

For a 10,000 to 14,000 ton grain or ore freighter, for a four day trip, it is necessary to stock some 50 gallons of milk, 5 or more gallons of buttermilk, 2 to 4 quarts of whipping cream and the same amount of coffee cream, 10 to 20 gallons of chocolate milk, 2 cases of butter, 2 crates of eggs, 10 pounds of cottage cheese and 2 gallons of ice cream.

Milk is a favorite drink on all boats, buttermilk and chocolate milk being equally popular during the summer. Whipping cream is used for puddings and other desserts, while ice cream is served twice a week. This last must be kept frozen by means of dry ice as few of the lake freighters have yet installed deep freeze cabinets. For all other perishable foods, however, there is ample refrigeration, built into the ships' galleys and operated by the power generated by the ships' own dynamos. Boats are loaded at each end of a long trip, one of these main supply bases being Buffalo, N. Y.

### That Ole Debbil Price

Every shipowner is careful, of course, to load supplies where prices are best. So, while foods are loaded at the main terminals, other food supplies may be added at ports along the way if price, quality and availablity of certain products makes this practical.

Until this year all milk purchased by the freighters came from the dairies in 30 to 40 gallon containers. This served for all purposes, cooking and drinking. This year, however, the Board of Health has issued a regulation forbidding the sale of drinking milk in bulk. The result is that from 10 to 20 gallons are received for each trip in bulk, to be used for cooking, while the balance, for drinking, comes in half pint and quart cartons. The price has risen from 200 to 300% in the last ten years.

The manner in which the big boats order and receive their supplies is unique. In Buffalo about 90% of all food supplies are loaded in mid-lake by boat. A sea-to-shore radio hook-up sends the orders to a supplier, where they are quickly packed and delivered. One of the really large such suppliers is A. Clampett, of the P. J. Gun wholesale firm. Supplies, available during any time of the 24 hours of the day, are taken out to a freighter by a 50 foot motor launch, kept in readiness for this purpose at all times.

This launch also meets some incoming boats and receives their orders. When necessary these can be filled and delivered in an hour. Dairy products are not loaded until the last, so that these highly perishable foods need only be out of a refrigerator for about ten minutes. Mr. Crampett has reserve supplies of these products in a huge refrigerator in the store, where some 200 gallons of milk alone are ready for emergency calls.

The other 10% of supplies are delivered at the docks by truck. Here, too, rapid 24 hour service is in force from March 15 to December 15, the months when navigation is open in Buffalo harbor.

There are also boats which load at special plants, for instance, many of the ore freighters load and unload their cargoes at the Wickwire Spencer Steel Co.'s docks and all food supplies are delivered there to the boats before they start on their long trip up the lakes.

### Ice and Ice Breakers

The prevailing winds off the Buffalo shore are from the southwest and as a result this port is often ice-locked later in the spring than some of the other Great Lake horbors. This last winter,

*(Please turn to Page 76)*

The GLASS MILK BOTTLE, invented by H.D. THATCHER was first used in OGDENSBURG, N.Y.
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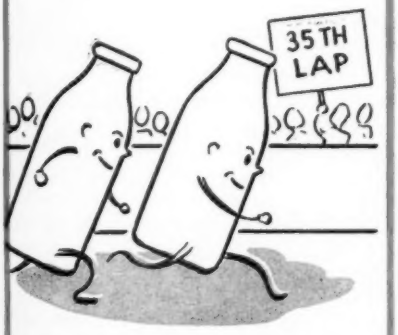
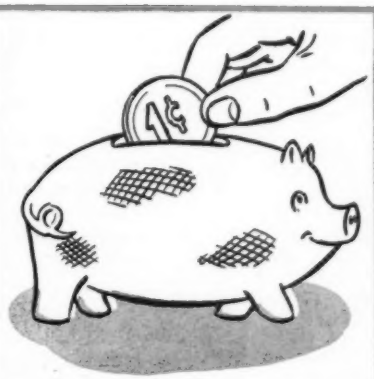



*Only returnable glass milk bottles make 35 round trips or more each — result: lowest cost container for milk.*




*Costs approximately 1¢ a quart less to package and deliver milk in glass bottles. — Don't throw your profit away on other type containers.*

*Thatcher T-Squares increase cold room storage by 50% and truck capacities up to 63% — two of the best ways to reduce costs for more profit.*

Now's the time for dairies to watch costs. A recent study shows profits per $1 of sales is only 1¢ — a slim margin that must be held and increased.

Thatcher offers you a "double-barreled" helper that can't be beat for reducing costs . . . which is the best way to increase profits. It's the *returnable, glass,* T-Square milk bottle.

*Returnable glass milk bottles bring the customer back into the store for repeat sales — and 65% of housewives prefer store-purchased milk in glass bottles.*

**THATCHER GLASS**

**MANUFACTURING COMPANY, INC.**
**ELMIRA, NEW YORK**

# WHERE IS THAT FLUSH?

*By* **NORMAN MYRICK**

WITH ALL THE ENTHUSIASM of a third strike the anticipated spring flush failed to come up to expectations. Reports across the nation from Washington State to New Hampshire tell the same story—milk production below 1947—milk demand continues high—weather conditions poor. The only State to report an increase over 1947 production for May was Virginia and in Virginia the word is that "we have not had a surplus, particularly in graded supply, for some time."

Three factors have played a leading role in the spring flush picture; the weather, meat prices, and continued high demand for milk. State after State replied to the *American Milk Review's* query on the extent of the spring surplus "there is no surplus here". State after State likewise reported that pastures which in general got off to a good start were neutralized by cold rainy weather or by an unseasonal dry spell. And most disturbing of all was the widespread report of increased slaughter of dairy cattle for beef. Indeed the price of meat has become sufficiently high to cause Canadian officials to begin investigating the abnormal shipments of Canadian dairy animals into the United States. Canada has an embargo on the shipment of dairy cattle out of the Dominion unless the cattle are to be used as dairy animals. Canadian officials are suspicious that many ot the dairy animals are finding their way into the stewpot rather than the dairy barn.

The weather, confounding tradition and operating with feminine fickleness drenched the Far West and the East with unprecedented rain and low temperatures while visiting the dairyland States of the Mid West with spring drought.

### State of Washington

There is a considerable drop in the expected spring flush of milk production.

In the first place the cow population is down somewhat and the price ratio between dairy products and other crops is such as to not be encouraging to the production of milk. This is particularly true of factory milk where the greatest seasonal fluctuations are felt.

The weather conditions had a great deal to do with the lateness and also the drop in peak production for this State. Crops, including pastures were three weeks late in developing and in many cases continued rains after the start of the spring season resulted in damaged pastures which will no doubt be felt as the summer advances.

In Washington and the Northwest the population increase has not leveled off and there is a continued high demand for fluid milk products. It has been estimated that production is 15 to 25% under a year ago. More recently the flood disaster which has occurred in this State and neighboring States will have a great deal to do with further lowering milk production, inasmuch as much of the flood area is in dairy districts.

There is a definite spring surplus, but this is not of such volume as to cause any problem in handling it.

### Wisconsin

1. While Wisconsin pastures wintered fairly well, there was some winterkilling in the central and western parts of the state. Pastures had a rather good start early in the spring, but in late May and early June we have had a period of dry weather which has reduced pasture prospects.

2. Cow population is about 2 percent lower than a year ago and it has some effect upon the flow of milk this spring.

3. The demand for milk has been unusually good this year and there seems to be no serious problem of surpluses.

4. Production declines from a year ago are not large, but for the immediate future a milk flow of possibly 3-5 percent under a year ago is in prospect.

### Minnesota

The seasonal increase in milk production which occurs every year between April and May was only 12 per cent this year compared with the average of 19 percent for the 10-year (1937-46) average. Poor pasture development in the dry areas of the State and a general decrease in the number of milk cows on farms are important factors in this comparison. The production of 874 million pounds of milk in May 1948 compares with 896 million in May 1947 and the peak May production in May 1941 of 1,008 million pounds. The 10-year (1937-46) average production for May is 920 million pounds. Milk cow numbers are showing only a moderate decline in the important dairy counties although for the State the decline averages 7 percent.

Hay crops developed slowly during May in most areas, but particularly in the central section of the State where soil conditions became extremely dry after mid-May. Alfalfa and clover stands in the southeast quarter of the State had suffered damage during the winter and the dry, cold weather slowed recovery with the result that the tonnage is expected to be low.

### Indiana

Indiana pastures were above normal but the decline in cow population resulted in a slight decline in production compared with the same period a year ago. Indiana cows turned out 361 million pounds of milk in May of 1948 which is 4 million pounds short of May, 1947. Production still was 21 million pounds above the ten-year average, however. Demand continues so great that normal surpluses are readily absorbed.

### Virginia

Conditions favorable for high milk production,—abundant pasturage and moderately cool weather,—continued through May. Production per cow during May, estimated at 415 pounds, is the highest for this month on record. Total production of 186 million pounds was 6 percent greater than May production last year and 26 percent above the 1937-46 average production for the month. Production during the first 5 months of this year was about 7 percent above last year and 24 percent above the 10-year average production for this period. Throughout the United States, milk production per cow during May set a new high record for the month but total production was 2 percent less than in May last year due to the smaller number of cows.

Growth of hay and pasture for the State as a whole was good to excellent through May as rainfall was above normal

over most of the State. In the southwestern district, the condition of pastures and hay declined throughout the month due to insufficient rainfall. Despite the decline in this district, the condition of both hay and pasture for the State on June 1 was considerably above last year and the 10-year average for this date.

### Maryland

Production in Maryland did not fall off as much as it did in some other areas, although the supply of milk in both the Washington and Philadelphia markets from Maryland producers is less for May of this year than for May of last year. During the first four months of 1948 on the Washington market production was 6 per cent over last year but May was under a year ago with demand about the same.

Pastures were generally not retarded very much by weather conditions but excessive cool, rainy weather probably caused the cows to drop off in milk some during May because of exposure to this weather while in pasture.

There has been an increase in sales of dairy cattle for beef because of high beef prices during recent months and that possibly has had some effect on total production. Figures from the Baltimore slaughter houses show that 9,950 cows of dairy origin were slaughtered during the first three months of this year compared to 8,340 during the same three months of '47 (these figures pertain only to cows received from Maryland farmers). Reports from the stock yards say that cattle are coming in in greater numbers now than earlier in the year.

Information is that demand, on the markets supplied by Maryland producers, for fluid milk is about the same as last year.

Concerning production, the Maryland crop reporting service shows that on June 1, 1948 the average cow milked in Maryland produced 27.14 pounds per day compared to an average of 26.84 pounds per day as of June 1, 1947. Therefore, production per cow milked is slightly above that of a year ago.

### New Hampshire

The annual spring surplus has not come up to expectations in New Hampshire largely because of the weather. Last summer there was an excessive amount of rain at the time the farmers were trying to hay, consequently a great amount of the hay got wet and was of very poor quality before it was stowed in the barn. The farmers, in most cases, delayed feeding this hay until this spring, hoping to be able to turn out their cows early. The heavy rains and cold weather delayed turning the cows out from two to three weeks forcing most farmers to use up this poor hay and causing quite a drop in milk production.

Another reason for the unexpected drop is that very many farmers are selling their poorer cows for beef while beef is bringing such a high price, and have not as yet replaced them.

There is also a surprising number of small farms that are no longer producing milk and as yet have not been purchased by a larger farm or another operator.

### New York

May milk production in New York, approaching the seasonal peak, was about 3.5 percent under May 1947, and exceeded April 1948 by 17 percent, according to a Federal-State report issued from the New York State Department of Agriculture and Markets.

Dairy cattle were generally on pastures about May 18. The feeding of concentrates continued at the high levels of recent years, and the condition of pastures–91 percent of normal on June 1–indicated an abundance of succulent grass only slightly below June 1, 1947 and close to the average condition of 92 prevailing on this date during the favorable springs from 1942 to 1947.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Sodium Chlorite Products . . . Sodium Methylate

# HERE'S MILK, HO!

**Eighteen Hundred Cows In a Brewery — Daily Deliveries By Row Boat — Brooklyn as a Milk Shed; These Are Part of the Fascinating History of the New York Milk Supply**

*Celebrated in history is the Dutch purchase of Manhattan for twenty-four dollars. The transaction took place on May 6, 1626, when Peter Minuet, Director-General of New Amsterdam secured title to the land from the Indians. Almost unnoticed was an undertaking of a year earlier which, for its impact on the history and economy of the new nation, was the equal if not the superior of the famous real estate deal. In the year 1625 arrangements were made to bring a herd of dairy cattle to the tiny settlement on the estuary of the great Hudson. The dairy industry in North America was born.*

THE DUTCH EAST INDIA COMPANY undertook in 1625 to provide New Netherland with milk, contracting with the Hon. Pieter Everston Hulst to bring from Holland at his own risk 103 head of dairy cattle and horses. Cattle came on one boat, horses on a second.

Nieuw Amsterdam was established in 1626. Two years later, the milk scarcity moved Rev. Jonas Michaelius in Nieuw Amsterdam to write home to Rev. Adrianus Smoutins, "There are no horses, cows or laborers to be obtained. There is no refreshment of butter, milk . . . to be obtained, although a very high price be offered . . . I will be compelled to pass through winter without butter and other necessities which the ships did not bring."

In the first bouweries, or farms, the Dutch East India Company furnished the farmer a house, four cows, four horses and other items. After six years he returned the same number of animals, keeping the increase.

In 1650, an order against exportation of horses and cows was entered. A cattle fair was held in 1659 on Bowling Green and renewed annually for several years.

Pasture was near Fresh Water Pond, site of the present Tombs. Cattle were driven to pasture by Gabriel Carpsey, who collected them in the morning along Broadway, Maiden Lane and Pearl Street and returned them at sundown, always announcing his approach with a horn.

The English took over in 1666 and renamed the community New York. In 1684 it was ordained that butter equal the weight with which it was stamped. In 1805 Sunday sale of milk was forbidden between 9 o'clock in the morning and 4 in the afternoon.

### Delivered by Yoke

A Philadelphian's report of his New York visit in 1806 was quoted in Valentine's Manual in 1868:

"He that visits New York in summer will see many sweating beneath a wooden yoke. These are vendors of milk. A piece of wood, about two feet long, is made to fit around the back of the neck and rest on the shoulders. To each end is affixed a chain, with a hook at the end. This chain is of such length as to enable the carriers, by stooping a little, to hook the handles of two large milk vessels of tin, resembling a grocer's tea-canister, containing 3 or 4 gallons of milk. One of these is carried on each side to the homes of customers. A loud cry of 'Milk's come!' awakened me from a late nap this morning."

Delivery in those days seemingly was very much in the daylight.

In his "History of Brooklyn," written in 1869, Stiles says of the period just before the War of 1812: "About the foot of the present Orange Street a dock was known as the 'Milk man's Dock' Every morning, rain or shine, came vendors of lacteal fluid, stabled their horses in a row of sheds under the shelter of the heights; and, clubbing together in the hire of boats, were rowed with their milk to New York, not infrequently encountering, during the severe winter months, much suffering and serious danger from fierce winds and floating ice. Their cans were suspended from yokes across their shoulders. Thus accoutred they peddled their milk in the city and returned in the afternoon, wind and weather permitting, to the Brooklyn side, where they hitched up their teams and started home."

Brooklyn-New York ferry service started in 1814. "The Cries of New York," published in 1814, said: "Milk is carried around, twice a day in summer and once in winter, from door to door in large tin kettles, some of which held more than twelve gallons each. It is brought over Brooklyn Ferry in great quantities, some of it from several miles up the Island." A woodcut shows a vendor with yoke and suspended cans and a little girl running toward him with a pitcher as he cries, "Here's milk, ho! Here's milk, ho!"

The account continues: "Those who keep cows on the outskirts of the city drive around with the milk in carts which

**This picture, taken from Sheffield Farms' new motion picture "As New York Grew" is an authentic reproduction of distribution techniques in 19th century New York.**

are mostly covered. It sells for from 6 to 10 cents per quart." A skilled workman received about $1 a day.

Need for official regulation was hinted in 1834 by an ordinance that the owner's name appear on the cart, painted black on a white square at the rear of the vehicle.

### Dairies at Distilleries

By then, distillers decided that rye and corn mash, after the alcohol had been distilled from it, would make cattle feed, as had been the custom to some extent in England and Scotland. The mash, in fluid state, was barrelled for winter feed. Then cattle sheds were built near the distilleries so that the cows could receive the warm liquid mash as it came from the stills. Cows actually gave more milk on this diet, but the milk was not as rich. Cows, at first slow to take up the diet, became fond of it.

But in 1838, R. N. Hartley began noticing evil results. His youngest child, reared on this milk, became emaciated, but recovered when pure country milk was substituted. Hartley found that 60,000 families, including 25,000 children, were being supplied with milk from distillery-fed cows and that deaths among infants under five years of age had increased from 32 to 50 percent since 1814.

He found that a distillery in 16th St., west of Ninth Avenue, fed from 1,000 to 1,800 cows. These were kept in stalls about three feet wide, which were rented to their owners at from $4 to $5 a year. Distillery slop or mash was furnished hot at 7 to 9 cents a barrel, or a fixed charge of $2 a month. There were two other distillery dairies in New York City, three in Brooklyn and three in Williamsburg.

Hartley found the cows bloated, with glassy eyes, and believed they were in a constant state of drunkenness. The milk was alkaline and contained a very small percentage of fat.

He estimated the requirements for New York and Brooklyn at that time to be 15,000 gallons of milk a day, almost all of which was supplied by the distillery dairies at 4 cents a quart. He urged farmers in the vicinity of the city to enter the business, and stated that pure country milk was selling at six or more cents a quart. Some of it was brought in wagons from three to ten miles, but he prophesied that railroad transportation would soon be available.

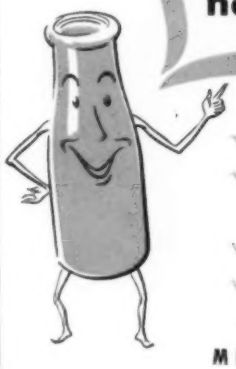
His writings and lectures produced a sensation, and led to the entrance of several country dairymen into the city.

### First Rail Shipments

Thompson W. Decker started in 1841 the one-route Morrisania Dairy. He was said to have been the first New York milkman to ship his milk into the city by rail.

The New York and Harlem Railroad bridged the Harlem River in 1840, and reached Fordham in 1841. Five years later it was carrying 6,000,000 quarts of milk in the year. When the Erie Railroad opened through Orange County, according to John Mullaly, "Nearly all the milk was converted into butter, and in that form found its way to the New York market.

In 1842, the first year after it was opened, 388,505 quarts were transported over it to this city, but the following twelve months the quantity was increased to 3,181,505 quarts. And so profitable did the farmers find the business that those who lived sufficiently near the road to benefit by the facilities it offered, abandoned the manufacture of butter and engaged solely in the milk trade and the raising of cattle . . . The first year, on account of the inconsiderable quantity sent over the road, but one train was run for milk, and that was the passenger or evening train. While this arrangement continued the farmers did not wholly abandon the manufacture of butter. They churned the morning's 'mess' and sent the evening's to

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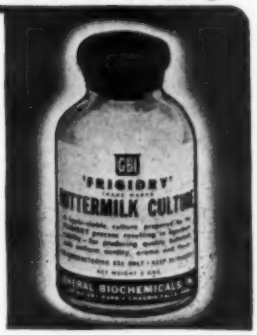


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**Milk Shipments by Rail Began in the Eighteen Forties. Thomas Decker is Said to be the First to Employ This Method of Transporting Milk.**

the railroad station for transportation to New York. In 1843 the company commenced running two trains, one in the morning and the other in the evening, thus enabling the farmers to devote their whole attention to the one business. At this time great alarm prevailed among the swill milkmen in the city, who had reasonable fears that the introduction of the pure country article would diminish their profits. They endeavored to prejudice their customers against it by false reports; but despite their opposition, the sale rapidly increased, and the third year 5,095,762 quarts were received over the road from Goshen and other stations."

While country milk with its far better qualities but higher price, gradually obtained a foothold in New York City, the distillery dairies still continued in operation. In 1847 Samuel E. Prime wrote that one distillery had stalls for 2,000 cows which it supplied with mash for $2 a month. The conditions were very bad, but the milk was sold under false names, as though it came from the most enticing country estates.

### Ignorance of Good Milk

Prime said that one reason country dairymen did not displace the distillery dairies, was that the people had been so long used to bad milk they didn't know good milk when they saw it. He tells of an educated woman who thought the cream on her country milk was a yellow scum, and wanted to discharge her milkman because of it.

Nevertheless, the country milk made headway, for, ten years after the first shipment, both the Erie and the Harlem railroads were carrying over 12,000,000 quarts of milk a year, in cans running from ten to thirty gallons, at an average cost of half a cent a quart for transportation.

But even then, according to Mullaly, while there were 250 milkmen selling pure country milk in the city, there were 500 selling distillery milk, and at least two-thirds of the milk used in New York was from distillery-fed cows.

This led to a sensational exposure of the distillery dairies by Leslie's Weekly in 1858. Artists on Leslie's were sent to picture conditions. Their illustrations shocked the community. A committee was appointed by the Common Council and heard both sides. The distillery dairies by getting the evidence pretty closely confined to the facts known to the witnesses, put up a capable if not convincing defense, and the science of the time was unable to tell the exact quality of the distillery milk. The outcome was that the committee merely recommended wider stalls, better ventilation, and more sanitary conditions, rather than a complete abolition of the distillery dairies.

As long as the chief source of the milk supply for New York City had been the distillery dairies, there was no encouragement for bettering the cattle, but with the rise of country dairies, improvement in cows was hastened.

### Cheese Factories Established

The first American cheese factory was established in 1851, in Oneida County, and the first creamery in 1861, in Orange County, N. Y. The yield in butter of a herd of 50 cows in Greene County, N. Y., was increased from 130 pounds average in 1852 to 225 pounds average in 1863.

Ayrshires from Scotland, and Holstein-Friesians from North Holland were introduced for the quantity of milk they gave, and Jerseys and Guernseys from the Channel Islands were brought in for the richness of their milk.

Harper's Weekly in 1869 stated the country dairies had developed until a good one occupied hundreds of acres and milked from fifty to a hundred cows. Milking was done by men, having gone far beyond the strength of the women. After being strained, the milk was put into large cans holding forty quarts, which were placed in tanks filled with cool water. The ideal condition was to have the water supplied from a cold spring or a highland brook. Rapid cooling in tubs packed in ice had been tried, but did not work as well as deep cooling.

As part of the movement for pure milk, the New York Park Commissioner made use of the milk from the city's herd in the park to supply fresh milk at a nominal cost for children, in the dairy in Central Park, which was on the site of the present Tavern On The Green.

### Board of Health Formed

The Board of Health, which had been formed in 1866, and was then more or less political in personnel, was in 1873 reorganized to put physicians and chemists in control. The lactometer disclosed the specific gravity of the milk, and the microscope showed the fat globules, but bacteriology had not yet come in.

There was inspection of milk at the railroad stations and steamboat lines, and 9/10ths of the fines for sanitary violations were for bad milk.

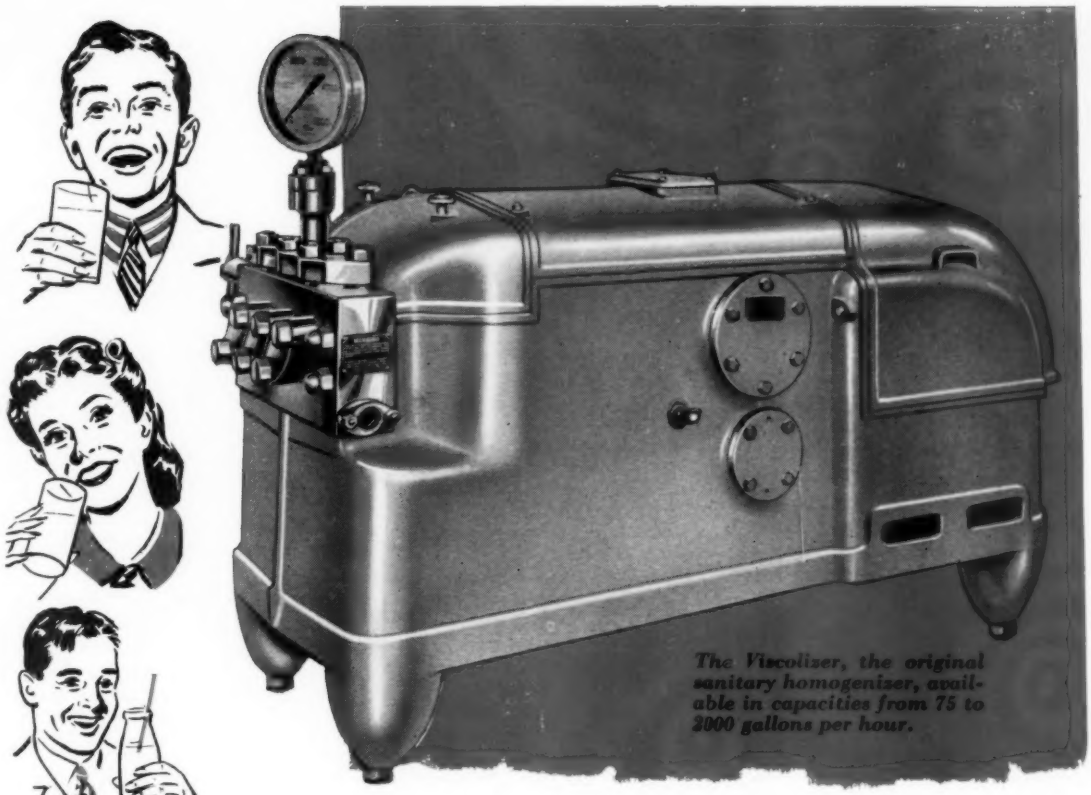
There was another crusade in 1877 against distillery milk, especially on Long Island, Leslie's Weekly showing unsanitary conditions at an up-State milk source, and the Board of Health took it upon itself to examine the sources of milk for the New York market.

Apparently the distillery dairies were gradually being supplanted by country milk.

Watering was charged in certain cases, but there was little other adulteration. Most milk trains came in at night, bringing the milk in cans, but air-tight jars were beginning to be offered.

In 1879, there was an International Dairy Fair at the American Institute, New York. This showed New Yorkers

*(Please Turn to Page 62)*



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# North of Forty-Nine

**A PAGE DEVOTED TO THE DAIRY INDUSTRY IN CANADA**

## PRICE CONTROL RELAXED

### Ontario's New Milk Regulations Lean Toward Free Market — Other Phases of Supervision Remain Stringent

TORONTO, ONT.—A NEW MILK Control Act was introduced in the Ontario Legislature recently, but only time will tell if the consumer is to benefit through lower prices.

The measure was introduced by Agriculture Minister T. L. Kennedy and there is no mention of price control, leading to the belief the government has decided to let the price find its own level in the field of free competition. This may result in a reduction, but there is no guarantee the price won't go up.

There are a number of significant changes in the new bill. The Milk Control Board will be headed by a judge instead of a layman. There is provision for the appointment of an administrative officer, and this position is expected to go to C. M. Meek, present board chairman.

Producers are empowered to set up their own marketing agencies for the sale of surplus milk and are permitted to establish co-operatives for the transportation of milk. If such co-operatives are formed, their trucks will not be required to hold public commercial vehicle licenses.

The collective bargaining features, by which the producers and distributors now negotiate a price for the former, are retained. They are extended to include transportation rates and the fixing of quotas and other conditions of sale.

The act is also expected to pave the way to solving the difficult problem of obtaining a uniform supply of milk throughout the year.

At present there is a surplus of milk in May and June. Producers and distributors may, in their market agreements work out plans to encourage and reward the farmer who will produce fall and winter milk.

The board is authorized to make regulations for the control of delivery routes, including the number of deliveries to be made over one route in a week. These regulations, it is understood, will be enforced only in an emergency. However, they could be used to reduce the overlapping in routes and have milk delivered to homes on alternate days, particularly during the cold-weather months.

This provision was in a bill introduced last October, but which subsequently was withdrawn. It was recommended in the Royal Commission report as a means of effecting economies in milk distribution.

The board is empowered to prescribe the types of containers that shall be used by dairies. If a standard bottle is adopted, there could be a free exchange of bottles by dairies and there would be no necessity of returning bottles to one particular dairy.

The legislation also provides for the creation of new zones and will make a distinction between urban and rural areas. Newmarket, Ont., for instance, is at present included in the Toronto area. Under the new zoning system, Newmarket will become part of another zone and the Toronto area will be confined to the city and suburban municipalities.

### THERE WERE NO TEARS

Toronto, Ontario—Traffic was tied up for 12 minutes on Mount Pleasant Road recently when a street car and a Roselawn Dairy milk wagon collided at Balliol St. and the lighter vehicle overturned scattering cases of milk over the roadway.

Police said the horse broke away from the wagon shafts, but was caught before he could run away. The wagon and the street car were damaged, but nobody was hurt.

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## PASTEURIZE MILK OR ELSE—

Toronto, Ontario—The Health League of Canada is soon to launch a campaign urging holidayers not to frequent summer resorts where pasteurization of milk is not practised, Dr. A. E. Berry, director of the Sanitary Engineering Division, announced this week at the second annual conference of the league's Ontario division.

"The only milk-borne diseases are in rural areas where pasteurization is not practised," said Dr. Berry. He added that it was still common to hear farmers in some districts ask customers if they wished their milk "pure or pasteurized."

Tuberculosis tests and venereal disease tests were only of value to industry if the workers themselves were made aware of their importance, said Dr. F. Crucikshank speaking on the subject of industrial health.

About 1 per cent of the workers in Ontario industries have been found to be infected with veneral disease, he said.

A substantial decrease in the venereal disease rate in the province was reported by Dr. Carl Hookings, of Toronto. He told the meeting that whereas in 1946 there was 120 cases per 10,000 population, figures released in 1947 showed only 80 per 100,000.

Largely responsible for this improvement, Dr. Hookings felt, was the public education program sponsored by the Health League. Pamphlets, bulletins and films on the subject of venereal disease have spearheaded the league's attack.

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## OPERATORS GET COURSES

Saskatoon, Sask.—Results of a recently completed one-week course for milk pasteurization plant operators at the University of Saskatchewan clearly indicate the feasilibity of further courses in the fall of this year or the spring of 1949, J. G. Schaeffer, director of the division of sanitation, department of health, says.

The course, believed the first of its kind in Canada, was attended by 26 operators from widely scattered centres in the province. Those attending received free tuition from the staff of the university dairy department in the operation of pasteurization plants, sanitary measures and governing legislation.

Further courses may be held for the remaining 14 of Saskatchewan's 40 operators as well as 26 sanitary officers employed by the public health department.

## NEW THEME — OLD STORY

### Producer-Veteran Alleges Big City Dairies "Clean Up" At Expense of Consumer and Producer

TORONTO, ONT.—"THE BIG CITY dairies are cleaning up at the expense of the farmers and public. They have jacked up retail prices of milk without passing along an equitable share to the farm producers."

This is the view of Archie D. Nesbitt, R.R.1, Stouffville, Ont., whom an official of the Veterans Land Act division of the Department of Veterans' Affairs described as "the typical discharged veteran" established by them on a farm supplying Toronto dairies.

His file at D.V.A. headquarters will objectively tell you he is a discharged engineer, who saw service from December of 1941 to April of 1946. He has a Dutch war bride whom he married in Holland in February 1946. They have a son 11 months old. The card on Archie D. Nesbitt will tell you, moreover, D.VA. bought him his present 75-acre farm for $5,000. Of course, he will have to pay the government back at low interest rates. D.V.A. also gave him $1,200 "free grant" toward buying equipment and stock.

But you have to visit Archie, his pretty blonde wife, "Rikie," and their little boy, Donald, in their modest farmhouse to appreciate how much success means to him on the farm to which his little family moved a little more than a year ago.

Archie had to give up whole-milk production "because it was unprofitable." He will tell you the quota system forced him to buy two separators. He sends only cream to the city now, feeding the skimmed milk to his pigs.

#### "Exploited to Hilt"

"If you think I'm just a beefer in a herd of happy dairy farmers," he said, "just ask my neighbors in the business all around here. They'll tell you, as they tell me, they're being exploited to the hilt by the big Toronto dairies.

Archie explained the present quota system would merely give him a pro-rata distribution, based on his individual quota, among the other producers, of the total sales of milk each month the Toronto dairy recorded. If, under his quota, he supplied two cans of milk each day to the dairy, and the dairy's sales were down the past month, his cheque would possibly only cover three-quarters of his months' shipments.

"I'm just a poor farmer trying to make ends meet, with no financial backing, and I can't afford to take a loss some months because the dairy's sales happen to be down," he said.

"When I have lots of milk, the dairy doesn't want it. In the spring and summer I have plenty, but they won't take delivery. In the winter, when the cows are in the barn and my feed bill is at its highest, the dairy keeps screaming for more milk. If I don't come through, they're liable to cut off my quota. They're in the driver's seat today, and they know it," he declared, harnessing his work team. He apologized for working while being interviewed, but explained he hadn't a moment to spare. "But I bet you'll find the big dairy magnates," he added bitterly, "arrange to have leisure time. Yes, brother, he added, "this must be the glorious post-war period they painted to us so prettily while we were overseas!"

#### Depends on Chickens

Archie says he couldn't pay off his debt on the farm to Ottawa and the unpaid balance of his $3,000-worth of equipment and livestock if he had to depend on dairy production alone. He has 200 chickens, two cows, two horses and a small number of geese and ducks. The chicks are his chief cource of income.

"There's no doubt the milk farmers have a real grievance against the Toronto dairies," said A. Lick, secretary of the Ontario Whole Milk Producers' Association. "The big dairies are, you can be certain, looking out for themselves all right; they're not losing money, never fear!"

Mr. Lick said the lot of the producer would be "greatly improved" if the old quota system were re-introduced. "In force many, many years, and apparently proved to be satisfactory to all concerned," stated Mr. Lick, "the old quota system told the milk farmers how much milk to ship beforehand. And they were paid for their quotas monthly in full." Under the present set-up, he said, "the farmer never knows what his return will be from month to month."

#### Commission's Finding:

John E. Houck, secretary and manager of the Toronto Milk Distributors' Association, representing Toronto's major dairies, in reply to the allegation the dairies are "cleaning up," cited the report of the royal commission. He said it found that to make one cent, the dairy had to handle five to six quarts of milk. To earn $1, it had to turn over 500 quarts.

"The dairy's business lives on volume, in view of the low fractional percentage profit on milk. I have lived on a farm for 25 years, and I know the farmer's life is no bed of roses. But to say the big city dairies are cleaning up is preposterous, especially in view of the impartial findings of the royal commission.

He declared the chief drawback to the entire trade, from farmer to dairy, is the fact that demand for milk is lowest in the summer, with large sections of the city population out of town, yet during those months supply is at its peak. Conversely, he stated, Toronto's demand for milk is highest in winter when the supply is lowest.

### JAMES BURGESS, DAIRYMAN

Toronto, Ontario—Manager of the Dry Milk Co. in Listowel, Ont. for 23 years, James Burgess, 74, died this week at his home, after a day's illness from a heart condition. He came to Toronto nine months ago.

Mr. Burgess was born at Bluevale and was a graduate of the Ontario College of Agriculture, Guelph, Ont. For some years he was inspector of the cheese department of the provincial government dairy branch. He had been retired for some time.

## SUSPECT CATTLE SHIPMENTS

Ottawa, Ontario—A large increase in the export of dairy cattle to the United States in the first four months of 1948 over previous years is giving rise to a suspicion in official circles that the American importers are selling some of the animals for slaughter.

If this is taking place it will amount to an invasion of the Dominion government's embargo on the export of fat dairy cattle to the U. S. The government permits the export of dairy cattle but shippers must produce registration certificates showing that the animals are in fact dairy cattle and that they are free from disease. Once the cattle are across the border the buyers can do what they please with them.

The increased export of dairy cattle is, of course, lowering the domestic supply of milk and dairy products.

Last year 45,801 head of Canadian dairy animals were exported to—the United States. In the first four months of the present year, 19,497 head were shipped and if this rate continues for the remainder of the year it will mean a loss to Canada of more than 60,000 animals.

These figures do not include pure-breds, the export of which has likewise risen. Last year Canada exported 28,-248 head of pure-bred dairy animals and in January, February, March and April this year 13,194 went across the border.

# SCIENCE TACKLES THE EPIZOOTIC

**Against the Background of a North American Epidemic a Distinguished Swiss Scholar Discusses What Is Known About the Foot and Mouth Disease**

*By* **DR. G. FLUCKIGER**

***Chief of Federal Veterinary Office, Berne, Switzerland***

STATISTICS SHOW THAT so far Foot-and-Mouth Disease periodically spreads over great areas in a violent form, within a short time. Its historic course was marked by great speed in Europe where, coming from East to West, it used to overrun the whole Continent in 2-4 years. After its extinction, regular periods followed when the continent was freed from this plague. Since measures are taken by veterinary police to fight this disease, it spreads more slowly and with less regularity in the courses of the epizootic.

In order to understand the periodical and violent outbreaks of Foot-and-Mouth Disease, the sources of the infection must be considered. The malady is caused by a virus which can be filtered, as Loffler and Frosch proved at the end of the last century. In order to produce new infection, the virus must be able to remain viable somewhere in a contagious condition.

In former years the situation was not very clear, and it was supposed that the virus could live for a long time in externalty, as this is known to happen with numerous bacteria. Now the most recent investigations have clearly shown, that this is only true of a minor number of cases. If the virus is attached to animal tissues, scabs of blisters, etc., it can, according to the investigations of Bedson, Maitland, Burbury and Waldmann, keep alive for months, while it will perish within a short time if it remains in freedom.

But its persistence in animal tissues would not suffice to explain the periodical cycles of epizootic because there is only a limited risk for susceptible animals getting into contact with such a persistent virus. On the other hand, researches have shown that the animal, i.e. the animal body itself, which has once gone through this disease, can harbour a virus as a parasite, which retains its virulence and can leave its host at any moment.

These observations have been made for several decades. Such hosts are called germ carriers, infection carriers, germ secretors, permanent secretors, etc. Although germ carriers have, after their survival in an epizootic of Foot-and-Mouth Disease, been observed and described by practitioners long ago, differing opinions were still maintained until Waldmann and his school succeeded, in 1930, in proving the existence of such germ carriers by experiment.

### Existence of Germ Carriers

At the present day the existence of germ carriers will scarcely be disputed by any expert. In this respect I may refer to the discussions that took place in the International Epizootic Institute in Paris, at the meetings that were held between 1937 and 1939, in which not a single delegate contested this point. If experimental investigations, made before or even since those described by Waldmann, led to other results, the reason must be found in the difficulty of ascertaining the presence of the virus. Perhaps new methods of concentration will facilitate a simplification of working methods in the future.

Modern science has, moreover, traced germ carriers in many, if not in the majority of infectious diseases, and especially in virus-diseases, in which a number of them have remained clinically more or less latent. I may quote cattle-plague, swine-fever, infectious anaemia of horses and horse-distemper. Moreover I refer to the respective publications by Ch. Nicolle, Lebailly, Stillman, Kolle and others.

Although the occurrence of germ carriers in Foot-and-Mouth Disease is recognized, opinions still differ on the question of how long the virus can be secreted after the animal has recovered, and in what percentage virus carriers occur, as both problems are still awaiting their solution. There are already statistics on this subject. I may mention the "Observations On the Appearance of Post-infections with Foot-and-Mouth disease", communicated by the Swiss Federal Veterinary Office in the "Schweizer Archiv fur Tierheilkunde", 1923, p. 401. According to this communication the animals that have recovered secrete the virus as long as 30 months after their first infection. Waldmann showed that 2.6 percent of the animals which were used for the preparation of hyperimmune serum in the Government Research Institutes on Riems Island, near Greifswald (Germany), and which had been thoroughly infected with Foot-and-Mouth Disease, remained permanent secretors.

### Virus Spreads the Disease

If virus carriers come into contact with susceptible animals, the latter can be infected. This explains, beyond doubt, a great number of the outbreaks of the epizootic and also part of the epizootic courses. Virus carriers have spread the disease into remote regions. The importation of such cattle for purposes of breeding or general utility to regions that are free of this disease, seriously endangers the health of their live-stock.

How can the periodical occurrence of Foot-and-Mouth Disease in many districts, and the great differences among forms of the disease be accounted for?

### HEADS MEXICAN CAMPAIGN

The U. S. Department of Agriculture announced that Harry H. Johnson of Houston, Tex., has been appointed special assistant to the Secretary of Agriculture and that he will be responsible directly to the Secretary for the administration of the Department's foot-and-mouth disease program in cooperation with the Republic of Mexico. In addition, he will be a consultant to the Chief of the Bureau of Animal Industry.

The program involves the joint Mexican-United States effort to control and suppress an outbreak of foot-and-mouth disease, a highly infectious livestock plague, that occurred in Mexico late in 1946 and still exists there. The United States staff in Mexico now includes approximately 500 veterinarians, technicians, and other specialists who are cooperating with similar Mexican groups. Latest reports indicate that the outbreak is now being well controlled in central Mexico more than 300 miles south of the United States border.

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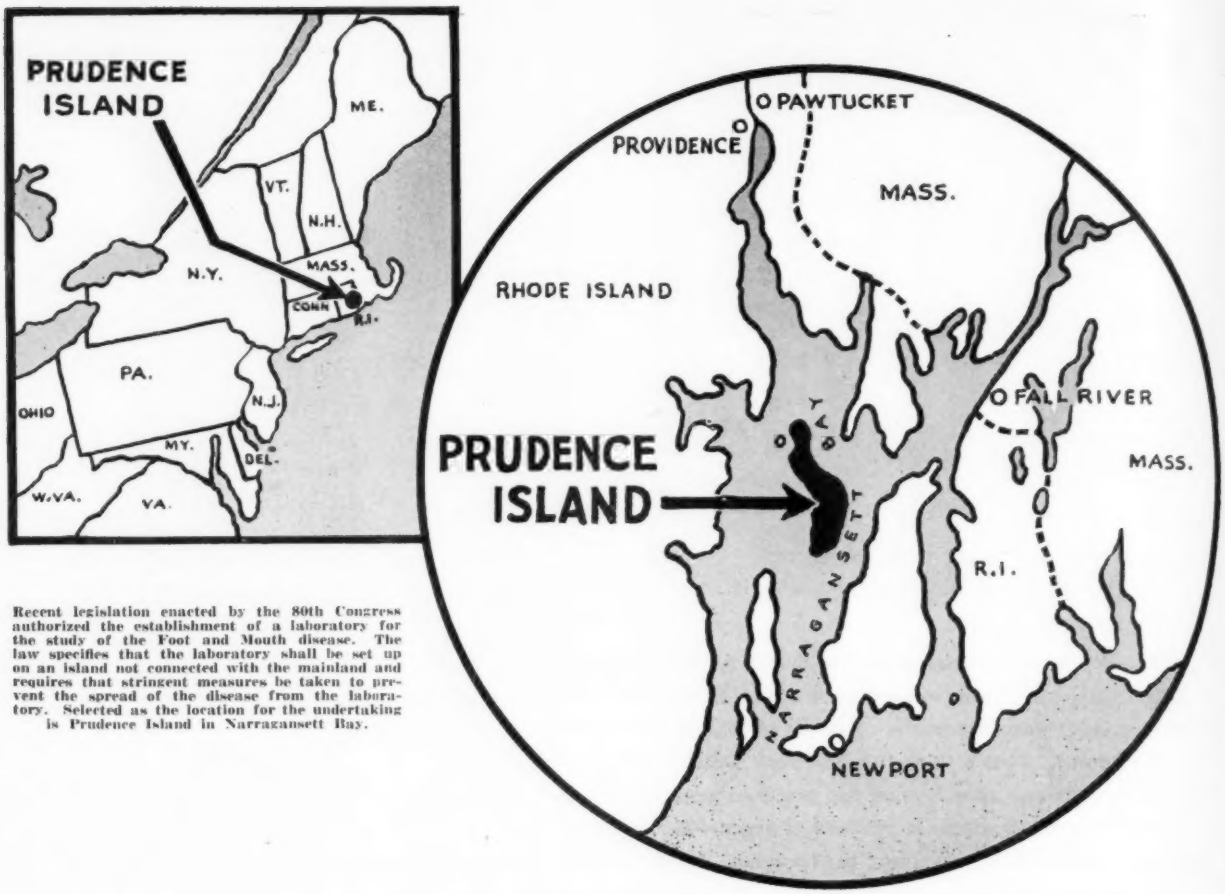


**Recent legislation enacted by the 80th Congress authorized the establishment of a laboratory for the study of the Foot and Mouth disease. The law specifies that the laboratory shall be set up on an island not connected with the mainland and requires that stringent measures be taken to prevent the spread of the disease from the laboratory. Selected as the location for the undertaking is Prudence Island in Narragansett Bay.**

In the first line one must point out that the immunity created by this disease does not last long. Animals, that have survived, can be reinfected by the same type of virus a year or two later. Furthermore, the nature of this virus is not homogeneous. Various types of it have been found so far, a fact to which I shall refer later. If the type changes within a district, the immunized animals can get the disease again in a short time and in the same degree of intensity as the first time.

### Virus Carriers Remain

After the practical extinction of widely spread epizootics, there will always remain a considerable number of virus carriers. Now, if such animals come into contact with newborn or with other healthy animals, that were bought and imported from other regions, new centres of contagion are formed—as has happened for centuries past—and these centres can spread the disease widely.

Until quite recently it was often maintained that, on the outbreak of Foot-and-Mouth Disease, the virus should be given an opportunity to wear itself out and to weaken itself by rapid multiple passages in a great number of animals. This opinion proved to be a fallacy. When no defensive measures are taken, the disease quickly spreads—at least in regions that were free of disease before—from one herd to another and from one species of cloven-footed animals to another species.

In consequence of its unrestrained spreading, great quantities of the infectious material are amassed and brought into the outer world by the excretions of the infected animals. The infectious capacity of the virus can increase thereby. The defensive or protective energies of numerous infected animals finally do not suffice to put up a successful resistance against the virus. The serious results are deaths, emergency slaughterings, great losses of milk and meat, in rearing, in working-capacity, etc. On the other hand it has been shown that an energetic application of appropriate protective and combative measures can greatly attenuate the development of the epizootic and reduce the losses considerably. For this reason it is desirable to make the greatest efforts in fighting this disease in every single instance.

The efficiency of protective measures is clearly shown by statistics in that the spreading of the disease is not only more or less impeded, but also retarded by measures of veterinary police, while its occurrences appear to be less regular.

The brilliant success of the "stamping-out" method practiced in England, the United States and Switzerland goes to prove that the germ carriers are responsible for the recurrence of this disease and that its regular or continual appearance is due to insufficient defensive measures. These countries succeeded in keeping their territory practically free from Foot-and-Mouth Disease during long periods, even when it spread widely in other regions. This method is successful in the first line as no recovered animals are kept in those countries; when the disease has entered the countries in the shape of intermediary germ carriers, its contagious effect is fought in the most energetic and thorough manner by a total slaughter of the infected animals.

### Geography and Slaughter Technique

Unfortunately the system of slaughtering has been applied only in a few states, as it has met with great difficulties in other countries for various reasons. In countries, whose frontiers open on large plains and have a lively traffic of cattle, for instance, the total slaughter of infected animals had to be avoided,

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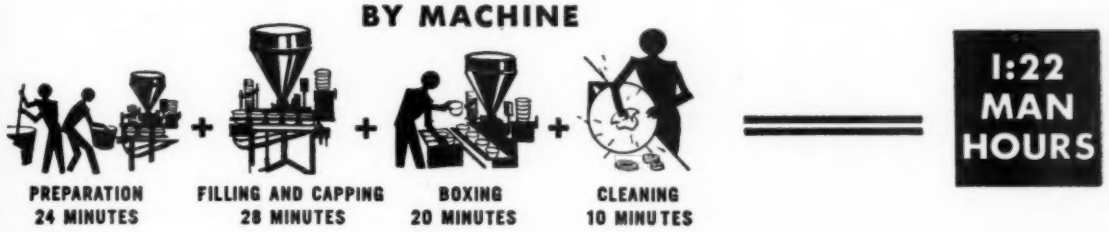


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because they were very numerous and most of them had taken the disease within a short time, so that the ensuing economic loss would have been too great.

The radical slaughter of all diseased animals in districts, where the cattle traffic cannot be thoroughly controlled and an early report of diseased cases is not ensured, would, therefore, scarcely be successful, because the virus from primary-centres spreads rapidly. For such reasons—as the past proves—one cannot hope for an international "stamping-out" of the disease by the system of total slaughter only. The best results by the "stamping-out" method have been achieved in countries, which are in an insular position—as, for instance, in England—and in those, whose frontier-line follows rivers or mountain ranges, such as Switzerland.

### Search for Vaccine

From these considerations it follows, that the extraordinary liability to infection makes it extremely difficult to fight this disease successfully by measures of the veterinary police, whose ordinances alone cannot be expected to achieve a lasting international effect. Circumstances have led a number of countries to introduce and to improve the process of immunization. There scarcely exists another disease on which so many considerable works have been published than on Foot-and-Mouth Disease. The aim has always been to find a vaccine which—after being deprived of its infectiveness—still retains a sufficiently active, immunizing effect upon a susceptible animal. Every method, which was successfully applied to the prophylaxis and therapy of other infectious diseases, has been tried against Foot-and-Mouth Disease. Simultaneous methods, guinea-pig-passages, culture-passages as well as the addition of chemical remedies, dyes, etc. were employed to attenuate the virus until it was sufficiently weakened or diluted in order to be fit for use as a vaccine. These methods were unsuccessful.

The same is true of all attempts to interrupt by chemicals the spreading of the virus in the body of the animal. Specific chemicals, such as the sulfonamids and Penicillin against bacteria are not effective so far against Foot-and-Mouth Disease, nor against any other pathogenic species of virus of human beings or animals.

### Active Method of Immunization

The discovery of the plurality of the virus of Foot-and-Mouth Disease, made by Vallee and his collaborators, marked a decisive progress in the investigation of immunity conditions. He was able to observe two types of immunization whose difference consisted in the fact, that when animals had gone through an infection of a certain type, they afterwards proved to be immune against this special type of Foot-and-Mouth Disease, but not against other types of this plague. Vallee named his two types O and A. His findings were confirmed later on by Waldman, who discovered a third type and named them A (which is identical with Vallee's type O), B (identical with Vallee A), and C. The plurality is the key to the understanding of the epizootic action during great courses of an epidemic and is a decisive factor for immuno-therapeutics and for the preparation of vaccines against Foot-and-Mouth Disease.

**MILK CROP LOWER**

Toronto, Ontario—Milk production in Ontario during the first three months of 1948 showed a 1,600,000-quart drop compared with the corresponding period in 1947, the Ontario agriculture department dairy report shows. Total milk production was 32,978,500 quarts.

When, in the 1920's, Vallee and his collaborators began to use formalin for the attenuation of the infectious material, new possibilities for protective vaccination seemed to open up. There was a certain amount of success, but an attenuation sufficing to ensure the loss of infectiveness could not be achieved, so that there was no sufficient guarantee for its practical application, without losing thereby the potency of immunization.

In scientific research work absorption was widely used for experiments in the preparation of vaccines against various maladies. In general Willstatter's aluminum-hydroxyde was employed as an adsorbant (Poliomyelitis, equine Encephalomyelitis, Fowl-pest).

S. Schmidt and his collaborators in Denmark have discovered that the virus of Foot-and-Mouth Disease, when absorbed by aluminium-hydroxide, can—just as Vallee's formalin vaccine—immunize the guinea-pig, so that a spontaneously non-susceptible general disease does not break out.

### Vaccine Has Been Developed

Basing their thinking on the experiments of Vallee and Schmidt, Waldman and his collaborators developed, a vaccine, the virus of which was exposed to treatment with formalin and to heat until it lost its infectiveness, while its immunizing capacity was fully retained. The positive effect of this new vaccine has now been proved by an endless number of applications, generally confirmed, to last for the period of 8 months, giving cattle protection for this space of time.

At the Conference of the International Epizootic Institute in May 1939 the successful applications of the "Adsorbat-Vaccine" of Riems in Germany and Switzerland were communicated and given expression by an unanimous resolution, declaring "that the conditions for the prevention of Foot-and-Mouth Disease have been fundamentally changed by the application of active immunization to this disease. One may now consider the protection of a country against this disease and even hope for its extinction after it has spread over a country." Great progress in combating Foot-and-Mouth Disease was hereby achieved.

### Effect of Vaccine

The original method of producing this vaccine has been published in detail in the paper by Prof. Dr. Otto Waldmann, Dozent Dr. Gottfried Pyl, Dr. K. O. Hobohm and Dr. Hubert Mohlmann. One type of this vaccine contains 0.2 percent of attenuated virus. The development of immunity begins on the 5th day after vaccination and is usually fully achieved in a fortnight. The protection will last for eight months or longer. No essential changes in the technics of preparation have been made successfully so far. However, the adsorption power of aluminium-hydroxide has been improved, whereby the concentration of the vaccine has been intensified.

The International Conference on standard methods of production of vaccine against Foot-and-Mouth Disease, which took place on September 30-October 3, 1947 in Berne, was attended by delegates of 11 countries. The conclusions described the requirements to be met by the vaccine and concluded that the aluminum-hydroxide vaccine, prepared according to the principles of Vallee, Schmidt and Waldmann is, if correctly applied, effective and in every respect innocuous. Furthermore, it has never been observed that immunized animals acquired the disease in consequence of the vaccination nor that they secreted the virus in an infectious form.

The former experiments of Waldmann, tending towards the use of neuropathic virus of Foot-and-Mouth Disease as an antigen for active immunization are of immunologic interest. The antigen seems to be successful when applied to pigs, but not yet in its application to cattle. These experiments should be continued.

### Only Bovine Virus Practical

So far, only the bovine virus has stood the test for the practical preparation of vaccine, i.e. the virus that is obtained by the artificial infection of cattle. Vaccines, which are prepared from so-called tissue virus, i.e. from vira that are obtained from tissue cultures, have proved



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to be insufficiently effective. The future will show if improvements are possible.

### Application of Vaccine

As we have seen, the aluminium-hydroxide vaccine developed by Vallee, Schmidt and Waldmann was declared by the International Epizootic Institute in Paris, as well as by the International Conference of September/October 1947, in Berne, to be effective and to satisfy the practical demands, while being innocuous at the same time. Since its introduction into practice in 1938, it has factually proved efficient everywhere with millions of animals, insofar as it was prepared and incorporated "lege artis" and corresponded to the types of virus in question. The latter are decisive for the preparation of effective vaccines, that is to say that the types of the individual epizootic courses must be known exactly. Without this knowledge, the preparation of vaccine corresponding to the specific types of virus would be impossible, because the absolute success of vaccination programs in single countries and their frontier neighborhoods could scarcely be expected. If several types have appeared simultaneously on one part of the world, a bivalent or perhaps even trivalent vaccine must be prepared which is technically quite feasible nowadays.

In its resolution, the Berne Conference has pointed out that a vaccine, intended for international use, must always be bivalent, i.e. that it must be prepared either with the O and A types of Vallee or the A and B types of Waldmann. The type to be determined can be found by the method of complement deviation or by animal test. If a vaccine is available, that meets all requirements, quite especially those concerning the types used for preparation, great results may be expected, if the other conditions are also fulfilled. The first of these conditions consists in an appropriate vaccination plan. Vaccinations made according to the wishes or demands of the individual owner of the animal or of commercial enterprises can never be successful in times of epizootics, i.e. they cannot help to stamp out the disease.

The entire planning and execution of the vaccinations must be in the hands of the responsible organs of the authorities. These must always have the possibility of applying the vaccination and to take any measures of veterinary police under the control of the authorities. Thus, vaccination can only achieve its purpose as a compulsory measure. In order to ensure its application without friction, the veterinary surgeons and the owners of the animals must be widely informed by direct instruction and public notices.

1. The chief source of contagion with Foot-and-Mouth Disease is found in animals that have survived the disease, a number of which remain germ carriers for a long period.
2. Germ carriers can be eliminated by slaughtering, i.e. by the "stamping-out" method.
3. The aluminum-hydroxide preparation according to Vallee, Schmidt and Waldmann represents an efficient prophylactic vaccine, by which susceptible animals can be safely immunized for months.
4. By an appropriate application of carefully prepared vaccine of this order it is possible to protect whole countries from this malady or to prevent existing centres of this disease from spreading it.
5. Success can only be achieved if the vaccine is applied according to an official government plan, while all necessary measures of the veterinary police are carried out at the same time.
6. Animals, that have been carefully treated by prophylactic vaccination and have never suffered from Foot-and-Mouth Disease before, are quite innocuous and do not risk to spread this disease, so that they can be admitted to international traffic. Quarantine measures against such animals are no longer justified by veterinary police, especially if these come from absolutely healthy regions.

### Control Service Necessary

An alert and precisely working epizootic service should in the future furnish international information, not merely concerning the spreading of the disease, but also with regard to the exact type occurring in the countries infected. This would not only put the non-infected countries in a position to take early measures of the veterinary police, but also to set up a broad protective screen at their frontiers, by vaccinating all of their spontaneously susceptible cloven-footed animals with the types whose importation is to be feared. Such protective action was, moreover, recommended by a resolution of the International Epizootical Institute in Paris in October 1946. If in spite of these defensive measures a great traffic of cattle should lead to outbreaks of the disease behind the protective screen, it can be "stamped out" by immediate measures, if needs be, by slaughterings, and a further spreading be prevented by extensive general vaccination. In this case also a perfect organization, under the leadership of experienced specialists, who take quick dispositions, is of the first importance.

In many countries the fullest utilization of vaccination in combating Foot-and-Mouth Disease is still in its early beginnings. It presupposes a perfect administration and a capable, well-organized and generally recognized veterinary legislature. Moreover, the financial question must be solved by the government in such a manner, that private, economic interests cannot cause obstruction of such a program.

The advantages of vaccination will be evident primarily in those countries, where the "stamping-out" method prevails. General vaccination of the exposed animals in the environs of the slaughtered stock will prevent the spreading of the disease. The good effect of the slaughtering method has been clearly improved upon by vaccination. Before such vaccination was practiced, it was impossible to protect the exposed animals against the surrounding primary centre of contagion. The measures taken by the veterinary police often proved quite insufficient in themselves to prevent further contagion, so that a great number of animals had to be slaughtered in order to suppress the epizootic. Nowadays the situation is much more favorable. By applying vaccination at the same time as the slaughtering of the primarily infected stock the disease can be stamped out mostly within a short period. Such a system is also financially much cheaper than the "stamping-out" method alone, as the quickly achieved immunization protects many animals, that would otherwise have to be slaughtered too.

### Vaccine Can Help

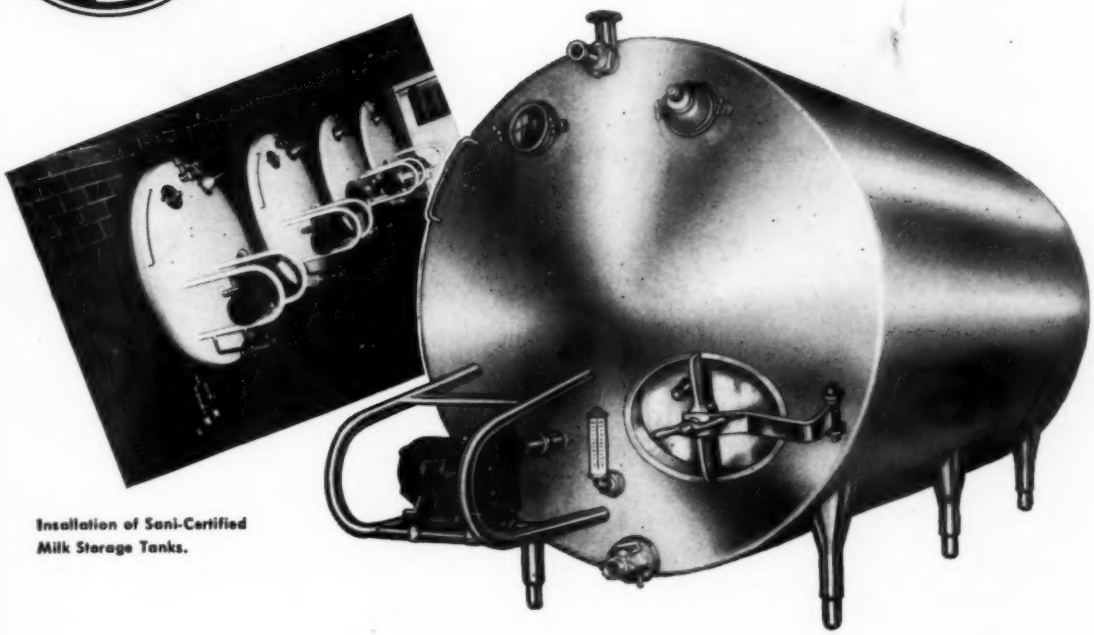
In those countries, where the isolation of the infected stock is the chief measure of defense, a careful introduction of vaccination into the official ordinances will be necessary, in order that vaccinating will be carried through without friction and that success will be ensured. At all events the results of the wide, well-planned vaccinations, that have been practiced since 1938 seem to prove:

1. that exposed regions can be protected against the disease by the formation of rings or barriers, and

*(Please turn to Page 67)*

SANI Certified

# MILK STORAGE TANKS



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THE OBVERSE AND REVERSE SIDES OF THE PASTEUR MEDAL

# Beyond The Line of Duty

## Sixteen Milkmen Have Been Selected as Recipients of Pasteur Medals for Outstanding Heroism and Distinguished Public Service

PASTEUR MEDALS for outstanding heroism and distinguished public service in line of duty will be awarded to 16 milkmen, it was announced by the Milk Industry Foundation.

John Russo, Sheffield Farms milkman of Jamaica, New York, was awarded the gold medal. Stepping out of his truck in Corona, Russo saw a woman crying hysterically as smoke was coming from the windows of a 2-story frame house. Learning that her 3-year old son was on the second floor, Russo leaped up the porch steps and crashed the front door to be met by blinding smoke. The child's voice was all he had to guide him, until he caught a glimpse of the boy's figure through the smoke-filled kitchen. Russo groped his way back down the stairs to the street with the trembling boy; then the milkman went back to his truck and drove off. If his singed eyebrows had not been seen by his supervisor, the incident would have passed unnoticed.

Angelo DiDio, a milkman for Suppiee-Wills-Jones Milk Co., Camden, N. J., was awarded a silver medal for saving the life of a child by artificial respiration. A 3-month-old boy was under a blanket that had worked over its head while the mother was bathing a young daughter. The mother, hearing a muffled cry, hurriedly raised the window and seeing Milkman DiDio, frantically called him. DiDio ran into the house, picked up the baby and immediately administered artificial respiration, gave directions to call a physician and then the police. When the police arrived with a doctor, the baby was recovering. It was said the baby would have died except for the quick-thinking milkman.

Other milkmen awarded medals are:

L. E. Lumpkin, The Borden Co., Dallas, Texas, on his first stop at 6:45 a.m., heard a scream. Running to the door, he saw an elderly woman on the kitchen floor, her clothes blazing. The door was locked, but he smashed it in. Dashing into a bedroom for a quilt and back to the kitchen, he smothered the flames, then ran next door and asked a neighbor to call firemen and police. While she was preparing breakfast, her dress caught fire. Alone and overcome with shock, she had given up. The doctor said the milkman saved her life despite third degree burns.

John Calabrese, Borden Farm Products, New York, on his route at 5 a.m., saw smoke pouring from a house in Flushing. He ran to the alarm box and rushed back, rousing the sleeping residents by pounding on the door and shouting. Two women heard him, and they groped through the smoke to safety, one with an infant. Ten other women and children were trapped and firemen had to carry them down ladders from the 2½-story building. Calabrese helped the firemen and ran back into the burning building to get a blanket to cover an aged woman who was carried down a ladder.

La Verne T. Orton, Bowman Dairy Co., River Forest, Illinois, delivering milk in Elmhurst, heard a child scream and in the back yard of a house saw a small boy hanging by his neck. He had slipped and his scarf had caught on a crosspiece supporting the garden swing. As Orton raced across the lot, the boy, whose arms and legs had been flailing the air, became still. The milkman raised the boy and tore the scarf from his neck, saving his life.

Max E. Elerick, Central Dairy Products Co., Oklahoma City, completing delivery at a grocery, heard a woman's scream and saw a human torch run from the house next door. Elerick rushed to her and with bare hands smothered the fire in her hair and tore as much of her clothing away as possible. He wrapped her in his coat to smother the fire, but the woman was so badly burned that she later died.

### Fire in Living Room

William M. Madgey, Harbisons' Dairies, Philadelphia, making early morning rounds, saw flames shooting from an oil stove in the living room of a residence. He broke down the front door and grabbed a big coat to beat out the flames, but the whole room was afire and spreading up the stairs fast. He roused the family with shouts as he dashed to the corner fire alarm box. As he ran back to the house, he saw a father and mother with five children leaning out of the second floor windows. He told the children to jump and caught them one at a time. He also caught a 4-week-old baby which the mother was holding. With a neighbor's help, a ladder was raised and the others were helped



XUM

down. By the time the firemen arrived, Madgey had gone on. His part in the action was only learned later.

Gerald Sperberg, Ottawa Dairy, Ottawa, Canada, noticed there were no empty bottles left out for him by a regular customer. He knew the housewife had had two strokes previously, so he investigated and found the woman unconscious in the kitchen. Food on the stove had spilled over and had put out the fire. While the elderly woman lay on the floor unconscious, the house began to fill with gas. The milkman carried her out and summoned a doctor and police.

### Schuykill Tragedy

Dominic R. Vesper, platform manager, Pennbrook Milk Co., Philadelphia, heard children crying that a playmate had fallen into the Schuykill River when the bank gave way. Vesper dived into the icy river time after time in a vain attempt to rescue the 12-year-old boy. Vesper, a slight young veteran severely wounded aboard the *Boise*, dived until exhausted.

Warren J. Atkinson, G. A. Perret's Dairy, Dinsmore, Florida, delivering milk, saw smoke coming out of a window. He knew the family had been away, but the house was locked. Sending his helper to call the fire department, he kicked out a window and crawled in until he found the unconscious owner who had returned alone and rescued him.

John Francis Doyle, driver salesman, Philadelphia Dairy Products Co., Philadelphia, delivering milk about 8:30 a.m. in Yeadon, noticed smoke around the back door. Not getting an answer, Doyle broke in the door to find kitchen curtains aflame. Towels over the stove caught fire when a 4-year-old turned on the burner. Doyle beat out the flames with wet towels and discovered the mother in the basement washing clothes knowing nothing about the fire. The frightened child could not give an alarm and had hidden herself.

### Omaha and New York

Robert M. White, Roberts Dairy, Omaha, was making a delivery call when a housewife rushed out and said that the basement was on fire. He crawled through a window of the smoke-filled basement with a garden hose while flames were licking at the floor above and put out the fire in the incinerator.

Isadore Bedwinek, foreman, Sheffield Farms, New York, and another milkman, making deliveries, noticed smoke at the window of a first-floor apartment nearby. Climbing on a ledge, he broke the window with his hand. As smoke poured out, he continued yelling until he aroused someone inside, and then ran to a fire alarm box. When the fire department arrived, 25 families, including many small children, were out of danger.

**RESCUER AND RESCUED MEET IN ILLINOIS**
**La Verne T. Orton Veteran Bowman Dairy Company driver grasps the hand of Kenneth Fortier. Quick work by Mr. Orton saved the boys life when his scarf became entangled in a garden swing.**

Francis T. Curry, milkman, Sheffield Farms Co., New York, smelled gas in a Bronx apartment house at 3:45 a.m. He went from door to door to locate the gas and awaken all occupants. Getting no response where the gas was strongest but hearing some sounds, he shouted warnings not to light matches and a groggy couple appeared. A gas jet had been left open.

### Apprehended Thief

Richard H. Scheedel, Sheffield Farms Co., New York, making collections in the Bronx, saw a girl of 17 come out of a customers apartment carrying a pocketbook. He had seen her acting furtively at other houses. He told his customer about the girl and pocketbook. The customer knew nothing about the girl, and the milkman ran downstairs and caught her going into another doorway and held her for the police. The girl had 2 other purses containing large sums of money.

George Alvin Peregoy, fieldman, Windsor Dairy Products Co., Findlay, Ohio, calling at a dairy farm, probably saved the lives of a farmer and his son overcome by gas from a car exhaust. A strong wind had held exhaust gases in the garage. Peregoy warned them about the gas, and they came out but collapsed. The milkman gave artificial respiration, although both failed at times to give any sign of breathing. When a physician arrived, the milkman also lost consciousness as a result of the gas.

The Pasteur Medals awarded annually from nation-wide nominations are for distinguished public service in 1947. A committee of women editors selected the winners.

# DAIRY INDUSTRIES SHOW

## Record 8,000 Rooms in Atlantic City to Be Ready for Visitors to Big Show and Dairy Conventions During Last Week in October

MORE THAN 8000 HOTEL ROOMS—a larger quota than the combined guest accommodations in all the hotels of a group of 30 other states—will be booked in Atlantic City during the last week in October by the dairy industrialists, equippers, suppliers, jobbers and educators who will assemble there for the great annual dairy conventions and the 16th unlimited Dairy Industries Exposition, the latter to be staged by members of Dairy Industries Supply Association.

Eight of the principal houses whose facilities will go to make up the 8000 total of rooms are pledged to capacity to either Milk Industry Foundation or International Association of Ice Cream Manufacturers, whose big conventions are the major listings on the week's packed calendar of events. The latter of the two bodies meets October 25-27 inclusive and the former on the following three days.

### Record Turnout Indicated

The rate of reservations in the pool of all other hotels, assignments to which are handled exclusively by an Atlantic City Hotel Bureau indicates a record final turnout for the city as a whole. Three of the larger pool hotels—the Ritz-Carlton, the Marlborough-Blenheim and the Claridge—were entirely booked for Show week before the end of May.

The Hotel Bureau affirms positively that there will be suitable accommodations for every qualified visitor from the dairy field.

### Atlantic City Fills the Bill

Atlantic City has been selected as the Show site, DISA spokesmen have earlier explained and have now re-iterated in reporting on the present prospect of attendance, because it is the only municipality in North America which, in addition to adequate exposition facilities, offers such a huge potential of guest accommodations. Chicago—the only centrally located city in the United States whose hotel facilities approach those of the New Jersey resort in volume—offers only some 5,000 hotel rooms during the same period, it has been pointed out, a number far below the minimum required. Late October has become the traditional Show and Conventions time because it is the most suitable period for dairy processors to turn to broad managerial and plant improvement matters, following as it does the peak months of summer milk production and processing and of ice cream consumption. For its large Show DISA must look to cities which can offer both very extensive exposition facilities and adequate housing provision available simultaneously for this particular period.

"If there were an equivalent—in the terms of such facilities—of Atlantic City further to the West that's where the 1948 Show would be," is the way a DISA spokesman has summed this up. "But this does not mean that we are not appreciative of the existence—and the availability—of the facilities of the famous New Jersey resort. For such purposes as the dairy industries put them to—in this and other years—the United States is admired or envied by all the rest of the world for the very possession of such exposition and convention utilities. They are indeed—today as never before—both a national asset and a dairy industrial asset."

Among the great gathering of dairy entrepreneurs will be many from overseas and thousands from throughout the United States and Canada not affiliated with the convening processors' associations or with DISA, but keenly concerned in studying the 300 industrial and educational exhibits which will make up the Show. A roughly identical pattern of housing facilities served almost 25,000 visitors of all categories during the 1946 Show.

Atlantic City, with its beach and its famous Board Walk, will be the scene of the great Dairy Industries Show during the last week in October.

### Housing Policies

DISA has set up an Exposition Hotel Committee which, in liaison with Atlantic City's hotel and other civic interests, is concerned with broad housing policies for Show week, and with a minimizing of grounds for complaints or misunderstanding either by hotel guests or hotel managements. The Committee, in preliminary reports of its activities, has pointed out that the "operation of housing some 20,000 persons transiently but comfortably in any city is both big and technically intricate" and that percentage-wise the instances of justifiable guest dissatisfaction among dairy industrial visitors in Atlantic City heretofore have been definitely minor. The Committee has developed understandings with the hotels which will further minimize possible grounds for 1948 guest complaints. Moreover, "there have been practices on the part of some Show week hotel guests that are cause for legitimate complaint by hotel managements," the committee has indicated, "which in common personal and business fairness must come to be restrained."

Harry L. Miller, Chester Dairy Supply Co., is serving as chairman of the committee. Other members are: R. D. Britton, Wisner Mfg. Co.; Gordon Lamont, Lamont, Corliss & Company; Paul Potter and Associates; C. A. Rogers, C. E. Rogers Company; and S. M. Sawyer, Dixie Cup Company.

### Reserving Rooms

Special reservation forms have been sent out by the convening associations and by DISA to their membership. However, anyone closely identifiable with the dairy industries may obtain reservations without use of a special form by writing directly to Atlantic City Housing Bureau, 16 Central Pier, Atlantic City, N. J. Requests should specify the hotel choice or choices (or at least include a general indication of the nature of the hotel preferred); type of accommodation required (single or double, etc.); approximate rate (high, low, medium); approximate date and hour of arrival and date of departure.

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## MILK STORAGE AND DISPENSING COOLER

Also ideal for dairy orange.

A self-contained "plug-in" unit engineered for outstanding performance. Rapid pull down and fast dry cooling. Top opening prevents spill-out of cold. Maximum capacity in minimum floor space.

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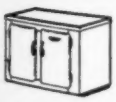
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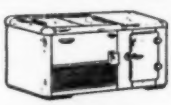
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* Trademark Reg. U.S. Pat. Off.

BILL GRIESE

# Portrait of a Dairyman

BILL GRIESE is a sort of composite of routemen everywhere. For twenty-five years he has driven the horses and the trucks of the Hyde Park Dairy Company over the streets of Cincinnati. If, after a quarter century, the engaging smile is still there, it is tangible proof of the good routeman's ability to get along with the world.

Bill performs many small acts which keeps him well-liked by housewives on his route. For example, one housewife invariably pays her milk bill on Monday, which is washday. Due to the noise of the washing machine, she cannot hear the doorbell, so Bill enters the house and flicks the basement light to make his presence known. Not infrequently Bill has used his own automobile to make special deliveries to please his customers. Another of his courtesies is placing the morning paper by the milk bottles.

According to Bill, approximately 5% of his customers are hard to get along with. Some find fault with his products or complain about the place the milk is set. Others don't like it when he steps on the lawn or think he tracks too much dirt on the doorstep. Bill contends that these types of people must be humored along. No matter what the nature of the customer, it is the duty of the driver to get on his side.

During the winter, Bill carries skid chains so that he can be of assistance if one of his customers' cars refuses to start. Other services which Bill has done have been installing fuses, connecting a gas stove, and fighting a fire with the aid of a garden hose.

The most unusual incident which Bill experienced happened one day when a woman ran out of her home exclaiming:

"My canary bird is dying!"

"Is he dead?" Bill asked.

"No, I just poured water on him. Do you think he will die?"

After carefully examining the lifeless body of the canary lying in a pool of water, Bill's official decree was, "Death by drowning."

*By Jack DeForest.*

## Chicago DISA Group Meets

General and departmental executives of member companies of Dairy Industries Supply Association of the Chicago area met last month at Hotel La Salle in that city for a periodic roundtable discussion of economic conditions in the dairy processing industries. The group has been meeting on a bi-monthly basis since 1941 and is the second oldest of such regional discussion groups, meeting on regular schedule in New York, Boston, Buffalo, Detroit, Philadelphia and St. Louis.

Executives of DISA member companies pictured above are, left to right, seated: Wayne Hult, Krim-Ko Corp.; Morris Rood, Schleuter Co.; Roy Zimmerman, Lathrop-Paulson Co.; H. L. Russell, Lathrop-Paulson Co.; B. Warfield, York Corp.; C. F. Rooker, Standard Cap & Seal Corp.; Donald Kroesch, Klenzade Co.; James D. Shaw, DISA staff member, and moderator of the regional meetings; A. J. Strand, Solar Sturges Mfg. Corp.; Robert Clifford, Crown Cash & Seal Co.; K. R. Larson Superior Metal Products Co.; G. Grimes, Morris Paper Mills Co.; H. A. Bornemann, Owens-Illinois Glass Co., American Rolling Mills Div.; Hugo Copp, Anderson Bros. Mfg. Co. Standing: Aldon Roussel, Fort Wayne Dairy Equipment Co.; Frank Neill, Cherry-Burrell Corp.; Robert Springer, Bowey's Inc.; B. W. Willard, Creamery Package Mfg. Co.; Roy Brill, Illinois Creamery Supply Co.; Larry Richards, De Laval Separator Co.; Glen Olson, Kalva Corp.; Marvin Strandel, Johnson & Johnson Co.; W. F. Thomas, Robert A. Johnston Co.; E. S. McClure, Crown Cork & Seal Co.

## Young New York Likes Milk

**New York City observed June is Dairy Month when a group of milk drinking citizens met with officials on City Hall steps.**

# In the Field of Irrigation

It is in the field of Irrigation that Layne Well Water Systems and Layne Vertical Turbine Pumps are most appreciated for their outstanding superiority of design, construction and quality. Of all places, the Irrigation field must have the utmost in dependability for long periods of continuous pumping. It is in this field that Layne water producing equipment is easily a 10 to 1 favorite in every case where ground water is used. Such leadership is highly complimentary to excellence of performance.

Basically, Layne Well Water Systems are extremely practical in design, and this design is noted for high efficiency. And supporting practical design and high efficiency, there is that well known Layne quality that assures longer life and practically no upkeep expense.

Layne Well Water Systems are designed for use in all situations where huge quantities of water must be produced at the lowest possible cost; packing houses, municipalities, factories, chemical processing plants, milk plants, petroleum refineries, railroads, etc.

For further interesting facts, literature, bulletins, etc., address

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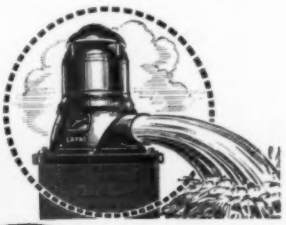

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# NUTRIENTS IN MILK

**The National Dairy Council Presents the Fifth in Its Series of Authoritative Articles on the Nutritive Character of Milk**

THE EXISTENCE OF SEVERAL new nutritive factors necessary for the normal growth and development of animals has now been quite definitely established. At least two of these factors are associated with milk protein. It has been observed that experimental animals given certain "native" proteins, such as casein, grow more rapidly than those fed mixtures of synthetic amino acids. Apparently some growth factor other than the amino acids is associated with the natural proteins. Wooley (1) has studied this factor which has been named *strepogenin*. Strepogenin is believed to be a peptide or peptide-like substance. It is present in large quantities in casein and other milk products, in brewers yeast, and in soybean meal. It is now believed that strepogenin is identical with "Factor S," which has been shown to be necessary for normal growth in chicks (2).

Scott, Norris and Heuser (2) have prepared from milk whey still another substance, distinct both from amino acids and strepogenin, which apparently is necessary for normal growth in chickens. Cary and Hartman (3) have also presented evidence for the presence, in casein, of a factor which has a favorable influence on growth and on other phases of development in animals. This substance, known as "Factor X," is also found in liver exttracts, beef and pork muscle, and egg yolk.

"Factor X" appears to be concerned in some way with the utilization of protein (3). When the level of protein in the diets of rats deficient in "Factor X" was increased from 20 percent to 40 percent, the growth rate of the animals decreased markedly. If the protein was further increased to 60 percent, death of the rats generally resulted within two weeks. On the other hand, litter-mate controls receiving "Factor X" grew at four times the normal rate when the protein was at the 40 percent level. At the 60 percent level of protein they not only survived but grew at a rate only slightly below normal. The rats on the "Factor X" deficient diet were found to have greatly enlarged kidneys, suggesting some metabolic condition which resulted in extra work for the kidneys of these animals.

### Factors Associated with Fat

A hitherto recognized but unidentified growth-factor in milk fat recently has been reported to be vaccenic acid. Several years ago Boer and Jansen (4) conducted experiments with rats which indicated that "summer" butterfat contains a growth-promoting substance that is neither vitamin A or D, nor the known essential fatty acids. Further systematic study of "summer" butter by these workers has led them to conclude that the growth-promoting substance is vaccenic acid, an isomer of oleic acid (5). Analyses of various kinds of fats and oils for their vaccenic acid content have shown "summer" butterfat to contain a larger amount than any of the other fats studied. Lard, mutton and beef fat were fair sources (6).

Milk, apparently low in niacin by chemical tests (7), is biologically high in niacin activity. It has been found by Elvehjem and co-workers (8) that symptoms of niacin deficiency in animals may be relieved by the administration of either niacin, or the amino acid tryptophane. The mechanism of the tryptophane-niacin relationship is not completely clear, but there are strong indications that tryptophane may serve as a precursor of niacin in the animal body (8,9). Milk is rich in tryptophane, which helps to explain why milk has a preventive and curative action in pellagra, the niacin deficiency disease. Milk may also possess additional benefits as in niacin food, in that it appears to stimulate the synthesis of niacin by micro-organisms in the intestinal tract (10).

### Less Known B Vitamins

Milk contains the lesser known B vitamins, pyridoxine, folic acid, choline, pantothenic acid, and biotin (7, 11, 12). Pyridoxine, or vitamin $B_6$, apparently is involved in the tryptophane-niacin relationship. It has been shown that pyridoxine-deficient rats and mice have a greatly reduced ability to convert tryptophane into nicotinic acid and its methylated derivatives (13).

Folic acid, or pteroylglutamic acid, is the newest member of the B-complex family. It is now being used successfully in the treatment of various types of macrocytic anemias in humans, including sprue and pernicious anemia (14). The study of this vitamin was complicated at first by the fact that it occurs both in a free form and in various complexes. Although milk is low in the free form of folic acid, evidence has been presented to show that it may contain the vitamin in a "potential" or "bound" form (15). There is also evidence that the presence of milk in the diet stimulates intestinal synthesis of this vitamin (10).

Choline is known to function in fat metabolism. It prevents the abnormal accumulation of fat otherwise occurring in the livers of certain experimental animals. Pantothenic acid deficiency symptoms are so widespread in the various tissues that some basic function for pantothenic acid in the metabolism of all cells is indicated. The functions of biotin are not clearly established, although it is known to be essential for animals.

### Caries Preventive Factor

Reports from the University of Wisconsin indicate that milk may play a specific role in preventing tooth decay (16). A complete lack of tooth decay was observed in cotton rats fed a diet of liquid whole milk to which mineral supplements were added. In contrast to this, the teeth of animals fed dry rations high in fermentable sugars were highly susceptible to decay. Furthermore, the addition of milk to this otherwise cariogenic dry ration reduced the extent of dental caries in the animals to one-half of that found with the dry ration alone. Studies on the nature of this protective action of milk are now in progress.

### Summary

1. Milk contains the substances known as strepogenin and "Factor X." These factors apparently are necessary for normal growth and development in animals.
2. A hitherto recognized but unidentified growth-factor in butterfat has been identified by one group of investigators as vaccenic acid.

3. Although chemical tests indicate that milk contains little niacin, research has shown that, biologically, milk is high in niacin activity. Milk contains large quantities of tryptophane which, current evidence indicates, may be converted into niacin by the body.
4. Milk contains the lesser known B vitamins, pyridoxine, folic acid, pantothenic acid, choline, and biotin.
5. Liquid whole milk diets have been found to be highly protective against dental caries in the cotton rat.

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# NDC'S EDUCATION PROGRAM

**National Dairy Council Advisory Committee Has Developed Unrivaled Material on the Industry for Use in the Nation's School System**

PLANNING AND PRODUCTION OF NEW educational materials for the years 1949 and 1950 are now under way in the National Dairy Council's program of public education in behalf of milk, butter, cheese and ice cream.

The work is being done under the guidance of a highly-select advisory committee, whose membership is composed of:

(1) Nationally known educators;

(2) Strategically located members from affiliated Dairy Council units; and

(3) Experienced personnel from the National Dairy Council staff who are trained in nutrition, education, and art production.

This advisory organization is unique, and it has performed for years a significant and welcome service in American education. (It is, incidentally, part and parcel of the essential Dairy Council program itself.)

The committee meets quarterly for a 3 day session, after coming to Chicago from all parts of the country.

And the results? They likewise are unique.

The National Dairy Council's educational materials have an unrivaled acceptance in the American school systems as aids in teaching nutrition and health.

Complementing these materials for schools are specialized pieces of educational literature that are designed for use by physicians, dentists, nutritionists, dietitians, clinics, health agencies, civic and public welfare groups, consumer groups, and so on. These specialized pieces also are developed under the guidance of the advisory committee on materials with the aid of skilled representatives from these professional fields. And as with the school pieces, the professional and consumer pieces of literature find heavy acceptance in their fields.

By far the heaviest volume of educational literature goes into the school systems, and great concentration of effort is required here. So, for convenience in understanding, let's consider the component parts of the advisory committee concerned with these school pieces—

FIRST, the teacher members of this advisory group. They are all outstanding in their fields. Each serves three consecutive years—one goes off the committee each year, in order not to disturb the committee's carefully worked out plans. The teacher members represent three segments of the professional teaching field: the lower grades, curriculum development and teaching methods in all grades, and home economics and nutrition education.

The service of these teacher committee members is highly valuable, because the advisory committee analyzes trends in educational materials and advises on individual pieces developed by teacher-authors and specialists. As ideas take shape in words and pictures, teacher members serve as review consultants, and during the intervals between meetings they obtain study and comment from other educators upon suggested manuscripts.

SECOND, the segment of the advisory committee that is made up of appointees from affiliated Dairy Council units. Among these there is a geographic distribution, so that the full committee can have the benefit of diverse community slants and interpretations on the usability of materials, the needs of different areas, and so on. Not only that—these

Members of the National Dairy Council educational advisory committee at work during their last session in Chicago

Dairy Council appointees also obtain professional judgments from their own communities regarding proposed plans and contemplated materials.

THIRD, the section of the committee that is composed of staff members of the National Dairy Council. These come from the departments of nutrition service, education, program activities, and art and production, and they have the special services of NDC's home economics director.

Each quarterly session of the advisory committee is preceded by heavy correspondence, through the national office.

### Never-Ending Job

Often more than a year of intensive work is required to develop an educational piece of literature. After plans are made, it is necessary to confer frequently with authors and illustrators on first drafts, reviews, redrafts—and more redrafts, until a satisfactory result is achieved. There is testing with children for whom the material is being created. There is checking with representatives of the dairy industry on all technical aspects relating to the production and distribution of milk, butter, ice cream, and cheese.

The end result is unusually heavy acceptance of National Dairy Council educational materials both by the nation's schools and by the children themselves.

It is not uncommon for an individual piece of literature to pass a half-million in requested circulation. Original printing orders are designed for a year's supply. Nearly 12,000,000 copies of these educational pieces were printed by the National Dairy Council last year.

National Dairy Council materials are noted for great utility, durability and long life. Many pieces are reprinted 8 to 10 times, and are brought up to date for each printing. They are all distributed on request.

This advisory committee on educational materials of the non-profit National Dairy Council today not only holds a unique place, in relation to American education and sound

nutrition, but its services become particularly important in view of the flood of educational materials that are being issued by many commercial agencies.

The committee actually performs four distinctive services:

(1) It gives a sound consensus of the best educational thought in the country;

(2) It performs significant service to communities in guiding the development of effective materials for use in their health programs;

(3) It especially performs a service to school children in guiding the development of teaching methods for building good food habits with natural acceptance of dairy products; and

(4) All these mean a direct and substantial service to the dairy industry itself—influencing attitudes that build sales that stay sold.

### *LAND BOOM INSURANCE*

World War II produced another first-class land boom and set the stage for the disastrous effects of inflation and deflation in prices of farm real estate. The experience of many farmers after World War I clearly indicates that a farm family is likely to get greater security and satisfaction by building a financial reserve to protect what it has than by enlarging holdings beyond the size needed for efficient operation.

The possibility of speculative profit from buying farm land when prices and incomes are high is seldom worth the worry and risk of losing everything if a drastic drop in farm incomes should follow. Even though a person buys farm land after the peak in a land boom is past, he will be likely to need a financial reserve to carry him through a possible period of lower farm incomes.

Farming is a highly speculative business at best and farm people need to have their financial reserves in the safest possible form and where they are readily available. It would seem that good farm management calls for planting another seeding of farm dollars in United States Savings Bonds during 1948.

### Method of Financing

There is still another unique feature to be told. It is in the matter of finance.

The National Dairy Council receives affiliation dues amounting to 5 percent of the annual budget of each of its affiliated units. These affiliation monies are earmarked—of them 70 percent goes for the development of new educational materials, 10 percent goes for visits and travel of staff members to the units, 15 percent is spent for expenses in advisory services, and 5 percent goes for coordinating conferences of national and unit staffs. All these aspects, of course, are vital to a sound educational program.

It should be noted in passing that these 5 percent dues from the affiliated dairy council units never pay the bill—additional funds are always needed, and are always provided, by the National Dairy Council from its own administrative budget, so that this creative work will never be handicapped or the NDC goal jeopardized.

That goal is to have Dairy Council's educational materials outstandingly effective in sound nutrition education for America's children, who are the future habit-buyers of milk, ice cream, cheese and butter; and outstandingly influential with their parents and adult leaders in establishing the essential importance of dairy products to American health and well-being.


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# HOMOGENIZED MILK PROBLEMS

*By* **P. H. TRACY**

***Department of Food Technology, University of Illinois, Urbana, Illinois***

P. H. TRACY

THE HOMOGENIZER AND VISCOLIZER have come to be standard equipment in market milk plants in this country as a result of the wide acceptance of homogenized milk. The term "homogenized milk" no longer needs to be explained to milk customers, as most of them have had an opportunity to test the merits of this popular beverage. Next to pasteurization, the process of homogenization has probably done more than any other thing to increase the popularity of milk as a beverage. Homogenized milk does not cream and therefore requires no mixing, it keeps better (less tendency for oxidized flavor to develop), it is more palatable, it is easily modified for infant feeding, it compares more favorably with evaporated milk for feeding babies, and is sometimes used in coffee and on cereals. Freezing does not destroy the fat emulsion in homogenized milk, nor do cream plugs form in this product. Vitamin D concentrates can be easily and uniformly dispersed during the homogenizing process.

Some plants, especially those using single service containers, homogenize their entire output of milk. In other plants, where both unhomogenized and homogenized milk are bottled, it is not uncommon for the percentage of the latter to run 50% or higher.

### The Homogenization Process

Homogenization is accomplished by subjecting the liquid being processed to such physical action as will result in a breaking-up of the large fat globules into ones of smaller size. The pressure necessary to bring about homogenization is developed by pumping the liquid through a restricted outlet, which may be a well-sealed valve or a series of small plates held at close proximity. The effect upon the fat globules is probably a combination of an impinging action, resulting from the striking of the rapidly moving fat against the sides of the homogenizing chamber, a shearing action, an explosive action, and finally a smashing action, resulting from forcing the liquid between two hard surfaces held closely together.

Homogenization increases the number of fat globules and the amount of fat surface. The globules in unhomogenized milk vary in size from 1 to 18 microns (Table 1), the majority being 4 to 8 microns in diameter. Each fat globule in milk is surrounded by a membrane, the exact nature of which is somewhat controversial, but it is fairly well established that it is made up of phospholipid and protein material. As the surface area of the fat globule is increased by homogenization, the amount of absorbed material is increased. One investigator has stated that the homogenization increases the amount of adsorbed protein from 2.27% in unhomogenized milk to 25.7% in homogenized milk.

### Fat Rising in Homogenized Milk

One of the arguments in favor of the use of homogenized milk is that it is uniform in fat content and that no mixing is necessary. In some markets standards for homogenized milk include limitations for the amount of fat rise in the milk over a period of 24 or 48 hours. For these reasons it is important that homogenization be complete enough to destroy practically all tendency for the fat to rise in a reasonable length of time.

The relation of pressure of homogenization and the length of time the milk is held at 40° F to the extent of fat rising is shown by the data in Table 2. The upper and low 70 ml. portions of quart samples were used for testing.

It is evident that as the milk stands, a certain degree of fat rising will occur. The slight difference in the test of the lower portion and the test of the well-mixed sample, even after standing for 72 hours, indicates that the rise in fat globules is not general but consists mostly of those that are of sufficient size to be able to respond to the force of gravity.

A single quart bottle of milk picked up by an inspector cannot be used for both the well-mixed sample test and for the fat test of the upper portion. The data in Table 3 indicate that it would be reasonably satisfactory in such a case to use the test of the lower portion of the quart sample as basis of comparison.

These data, as well as those in Table 4, also indicate that the temperature at which the samples are stored is important, there being more fat rising at the higher temperature. The data in Table 5 show that there may be a difference in results when different methods are used for removing the upper portion of the milk in the bottle. The lowest fat tests were obtained when the samples were removed in one portion with a pipette. Highest results were obtained when the samples were removed in four small portions with a pipette. However, because of its greater convenience, the use of the siphon is recommended. Tests on samples removed in this manner checked reasonably close with those removed with the pipette in four portions.

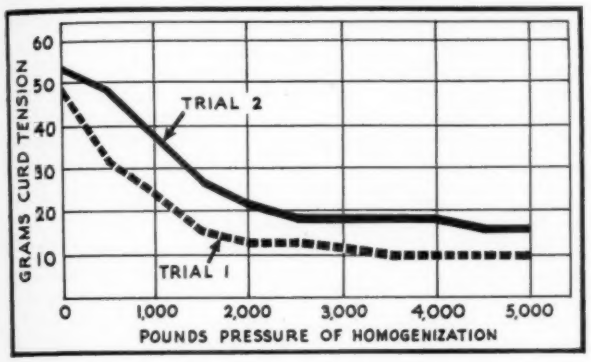
* The data reported in this article are the results of several years' study. Acknowledgement is made of the contribution to the study made by A. J. Hahn, M. J. Prucha, W. J. Corbett and A. C. Maack, former staff members in the Department of Dairy Husbandry at the University of Illinois.

Presented at the 17th annual State College of Washington Institute of Dairying, March 8-13, 1948, at Pullman, Wash.

### Curd Tension Reduction

The cause for the reduction in the curd tension of homogenized milk is thought to be the disturbance of the calcium casein phospholipid complex, as well as the increased number of fat globules. The adsorption of serum material at the fat globule surface undoubtedly plays an important part in curd tension reduction. This was shown in an experiment (Table 6) in which skim milk and 20% cream that had previously been pasteurized at 143.5° F. for 30 minutes were homogenized separately at 500, 1000, 2000, 3000, and 4000 pounds pressure at 150° F. Whole (4%) milk was also homogenized at the same pressure range. All possible combinations of the different skim milks and creams were made to form 4% milk. Curd tension values were then determined for all the samples. Homogenization of essentially fat-free milk had no effect upon the curd tension. None of the reconstituted milks had as low a curd tension as the whole milk homogenized at pressures comparable to those applied to the cream and skim milk used for making the reconstituted milk. Four per cent milk made from skim milk and 20% cream, each

**Relation of Homogenized Pressure to Curd Tension**




homogenized at 4,000 pounds before being combined to form whole milk, had a curd tension comparable to that of 4% milk homogenized at 500 to 1,000 pounds.

The curd tension of milk is primarily dependent upon both the amount of fat present and the amount of serum solids. As the fat is increased, the curd tension of homogenized milk is decreased unless at the same time the percentage of serum solids is increased. Since the milk solids-not-fat in milk are usually lower in summer than in winter, the summer milk usually has a lower curd tension (Table 7.)

Increasing the pressure of homogenization decreases curd tension rather rapidly until a pressure of about 2,000 pounds has been reached, after which further increases in pressure result in additional reduction, but at a decreasing rate. Little is gained by exceeding 3,000 pounds pressure as far as curd tension reduction is concerned (Table 8.)

When milk is homogenized after pasteurization at 145° F., reducing the temperature 15 or 20 degrees before homogenization takes place will result in a lower curd tension. Homogenizing at high temperatures (160°-175° F.) will also result in a reduced curd tension, but will cause a more pronounced cooked flavor. However, the effect of high heat treatment upon flavor is less apparent in homogenized milk than it is in unhomogenized milk.

There is no advantage in using double homogenization on milk, as the extent of curd tension reduction depends upon the total pressure rather than upon a combination of pressures.

### Sediment Control in Homogenized Milk

That it is the non-creaming feature of homogenized milk which accounts for the occasional occurrence of sediment in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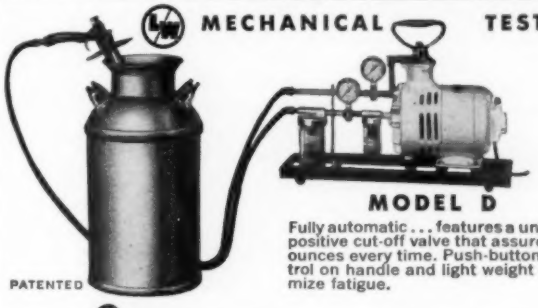

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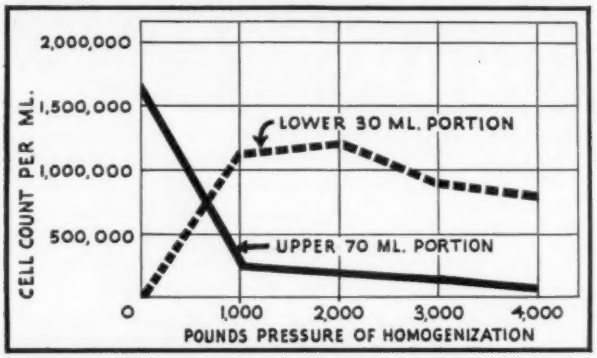
**Effect of Varying Homogenizing Pressures on Fat Rising, Degree of Sedimentation and Cell Count After 48 Hours**




this product is shown by the data in Tables 9 and 10. The data in Table 11 show the sediment to be composed of ether-soluble material (fat), protein, ash, and a significant amount of undetermined material. As the pressure of homogenization was increased, the percentage of protein in the sediment became higher and the ash content lower. The fat content remained fairly constant. These results indicate that a certain amount of destabilization of protein occurs as the pressure of homogenization is increased. This is further borne out by the data in Table 12, which give the results of an experiment in which an attempt was made to change the stability of the milk casein by adding sodium citrate and calcium chloride to the milk before processing. Under conditions in which the protein is rather unstable (high acid, high calcium), increasing the homogenizing pressure might be a factor in the amount of sediment occurring. The data in Table 13 indicate that the type of fat in the milk is not related to sedimentation.

Referring again to Table 10, it is evident that the cell content of the milk is directly related to the degree of sedimentation. Apparently the cells have a higher specific gravity than milk. Consequently, when no creaming occurs they gradually settle to the bottom of the container, together with destabilized protein which has a certain amount of fatty material encased with it. When milk creams, the cells are carried to the top of the bottle with the clumped fat particles.

Since the body cells in milk respond to the force of gravity, it should be possible to remove them by centrifugal force. In other words, by clarifying milk it should be possible to prevent or reduce the settling of the cells. Filtration, on the other hand, should have little or no effect upon the occurrence of sediment. That these assumptions are true is shown by the data in Table 14 and 15.

That clarification is more effective than separation of milk in removing cells is shown by the data in Table 16. However, the difference is not great enough to rule out the use of the separator when a clarifier is not available.

Less sediment occurs when the milk is clarified (Table 17) or separated (Table 18) after homogenization. This difference may be due in part at least to the removal of a certain amount of the protein destabilized by the homogenization process.

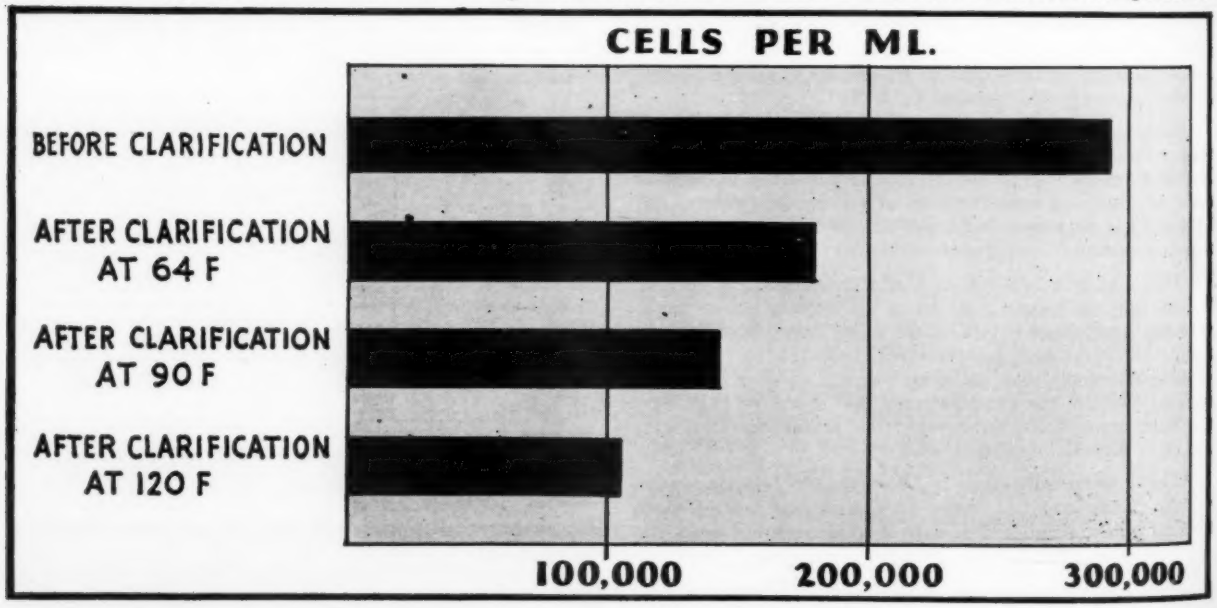
Slowing the rate at which the milk passes through the clarifier bowl (Table 19) and clarifying at high temperatures (Table 20) result in a more complete removal of the cells.

From the data that have been obtained, it may be concluded that if the cell content of the unprocessed milk is less than 200,000 per ml. the milk after homogenization is not likely to show enough sediment to be objectionable. Where clarification does not prevent sediment from forming, it is likely that a high percentage of the cows supplying the milk entering the plant have mastitis, in which case attempts should be made to inaugurate a program of mastitis elimination and control among the producers.

### Homogenization of Extra Rich Milk

The wide acceptance of homogenized milk has resulted in some plants finding their homogenizer capacity insufficient to meet their needs. Good results can be obtained in such cases by adding enough cream to the milk to raise the fat content to 10 or 12 percent (the equivalent composition of the substandard cream sold in some markets as cereal cream, half and half, etc.) The high testing milk is heated to 140° F., homogenized in the usual manner, standardized with skim milk to the desired fat content, pasteurized at 145-150° F., cooled and bottled. In this manner, the homogenizing pro-

**Reduction in Degree of Sedimentation in Homogenized Milk When That Milk is Clarified at Different Temperatures**



cess can be completed in about one-third the usual time. The clarification can be done after homogenization (the skim milk is clarified during separation) while the milk is hot, thus obtaining maximum cell removal. If the plant is not equipped with a clarifier, all the milk may be separated and then standardized to 10-12% fat, homogenized, cut to the desired fat test for the bottled milk, pasteurized, and cooled. Such a procedure may not be considered legal in some localities.

Doan(1) recommends limiting the fat content to 12% at the time of homogenization in order to prevent fat clumping and separation upon standing.

**Control of the Bacterial Content of Homogenized Milk**

In the processing of any dairy product the more equipment the milk comes in contact with, the greater the chance for bacterial contamination. This is true of homogenized milk, for the milk is often contaminated by the homogenizer to such an extent that the bacterial count is more than doubled. This is particularly true when homogenization takes place after pasteurization and when one of the older style non-sanitary types of machine is used. The increase from homogenization is also related to the type of bacteria present in the milk. When large numbers of clumping organisms are present, homogenizing will break up the clumps, producing an apparent increase in numbers of bacteria present.

When the modern type of sanitary homogenizer is used, it is possible to homogenize milk without any appreciable bacterial contamination (Table 21). To do this it is necessary, of course, to wash and sterilize the machine properly each day. The following procedure for washing and sterilizing the homogenizer is one that has been found to give desirable results:

1. After each day's use, pump cold water through machine without pressure until water at the discharge is clear.
2. Disassemble all parts coming in contact with milk. Using brush, wash the internal parts of the block and all removable parts in mild (0.5% washing powder solution.
3. Place removable parts on draining rack or in wire basket and rinse thoroughly with hot (170° F.) water. Rinse inside of block in same way.
4. Wash piston packing as in 2; rinse with hot water and place in glass jar containing either saturated salt solution or chlorine solution (200 p.p.m.). Gaskets made of leather should be stored in salt solution. Either salt or chlorine solution can be used for composition rubber gaskets.
5. With compressed, filtered air, dry inside of block and parts that have been removed to drain rack.
6. Just before using, assemble machine, and pump through chlorine water (200 p.p.m.) for five minutes. Apply pressure during the first two minutes.
7. Pump through rinse water for three minutes. Care should be taken to avoid contamination of water from hose.
8. To take care of water left in machine and to prevent the bottling of unhomogenized milk, set aside enough of the first milk through to equal 2% of the rated hourly capacity of the machine.

As an additional safeguard most dairies pasteurize their homogenized milk at a slightly higher temperature than that used for regular milk.

**Testing Homogenized Milk for Fat**

Some operators experience difficulty in obtaining satis-

(1) F. J. Doan, Increasing Homogenizer Capacity in the Processing of Homogenized Milk, the Milk Dealer, April, 1947.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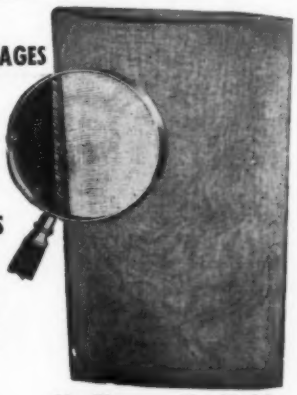

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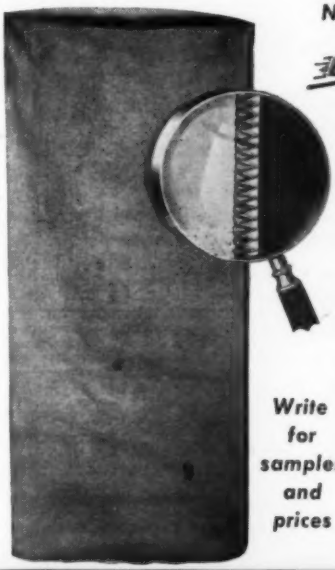

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factory tests on homogenized milk with the Babcock test. It has been found, however, that accurate tests can be obtained if the acid is added in small portions and the mixture is thoroughly shaken after each addition. It is also important that the temperature of the milk and acid be adjusted to about 70° F. Table 22 compares the results obtained by using this procedure, by using the Mojonnier method on the same milk, and by using the Babcock test on the same milk unhomogenized. These data were taken from the daily laboratory report of the University Creamery and are the results of routine tests run on the milk processed each day. It is evident that no difficulty need be experienced in obtaining accurate Babcock tests on homogenized milk.

### Curdling of Homogenized Milk

Complaints are sometimes made by the housewife that homogenized milk curdles when used in the preparation of such foodstuffs as soups, gravies, custards, and scalloped potatoes. The proteins of milk are destabilized by high temperature, low acidity, concentration of the milk salts, and homogenization. In preparation of the above-mentioned foods, temperatures of at least 212° F. are used. The pH of these food products is likely to be low. For example, the pH of one lot of potatoes was found to be 5.65 and that of the scalloped potatoes made from these potatoes was 6.07. Both of these values are lower than the pH of normal milk (6.5-6.6). During any cooking or baking process the milk salts are likely to become concentrated through evaporation of moisture. It is evident, therefore, that the conditions are such in the preparation of certain baked foods that if homogenized milk is used curdling may occur. The higher the temperature used in the cooking or baking, the lower the pH of the food mixture, the lower the pH of the milk and the higher the pressure of homogenization, the more likely the milk is to curdle.

Fortunately homogenized milk does not readily develop the oxidized flavor so common in unhomogenized milk. However, care must be taken to avoid rancid and sunlight flavor defects. If milk is not heated to a high enough temperature when homogenized before pasteurization a slight rancid flavor is likely to develop. Temperatures lower than 135° F. should never be used and, if possible, the temperature should be raised to 145° F. or higher before homogenizing. The temperature of the milk should be raised immediately after homogenizing to 145° F. or above and should be maintained at this point until after pasteurization has been completed. Care should be taken not to contaminate pasteurized homogenized milk with even traces of raw milk as the lipase in the raw milk will react with the butterfat to produce rancidity. Special consideration should be given to this possibility when arranging sanitary pipe lines.

Homogenized milk is more quickly affected by sunlight than is regular milk. This makes it necessary to reduce the amount of exposure to sunlight to a minimum. The use of colored glass bottles, paper containers, or milk delivery boxes aids in preventing the occurrence of sunlight flavor. Some glass bottles have slightly more color than others, which may account for differences in the intensity of the off-flavor. When delivery boxes are not used, it is not advisable to deliver homogenized milk at early morning hours during summer months, as such milk is likely to be exposed to sunlight for as much as three or four hours before being taken inside by the housewife and will have a decided off-flavor. Consumers should be discouraged also from permitting containers of milk to stand out of doors and in windows during the cool seasons of the year.

***A complete set of statistical tables compiled by Dr. Tracy and his co-workers in the course of their investigations into homogenized milk is printed below:***

**TABLE 1**
**Effect of Homogenization Upon Fat Globule Size**

| Lbs. pressure | Range of fat globule size (microns) Run 1 | Run 2 | Most often occurring size (microns) Run 1 | Run 2 | Average size (microns) Run 1 | Run 2 |
|---|---|---|---|---|---|---|
| None | 1-18 | 1-8 | 4-5 | 2 | 3.71 | 2.39 |
| 500 | 1-14 | 1-5 | 2-3 | 1 | 2.39 | 1.37 |
| 1,000 | 1-7 | 1-3 | 2 | 1 | 1.68 | 1.19 |
| 1,500 | 1-4 | 1-3 | 1 | 1 | 1.40 | 1.51 |
| 2,000 | 1-3 | 1-4 | 1 | 1 | 1.08 | 1.11 |
| 2,500 | 1-3 | 1-2 | 1 | 1 | .99 | .99 |
| 3,000 | .5-2 | 1-2 | 1 | 1 | .76 | .89 |

**TABLE 2**
**Fat Rising in Homogenized Milk in Quart Glass Bottles (Test of milk 4.022% fat)**

| Lbs. pressure | After 24 hours Top | Bottom | After 48 hours Top | Bottom | After 72 hours Top | Bottom |
|---|---|---|---|---|---|---|
| 1,000 | 4.232 | 4.057 | 4.898 | 3.987 | 5.738* | 3.920* |
| 2,000 | 4.142 | 3.964 | 4.372 | 3.880 | 4.475 | 3.990 |
| 2,500 | 4.104 | 4.002 | 4.250 | 3.984 | 4.353 | 3.974 |
| 3,000 | 4.054 | 3.996 | 4.242 | 3.938 | 4.290 | 3.913 |
| 4,000 | 4.031 | 3.991 | 4.120 | 3.980 | 4.178 | 3.900 |
| Ave. | 4.1308 | 4.002 | 4.3764 | 3.9538 | 4.5348 | 3.9394 |

*Tests were run on upper and lower 35 ml. of a pint bottle, using the Mojonnier method.

**TABLE 3**
**Comparison of Test of Upper 100 ml. Portion of Quart of Homogenized Milk With That of Remaining Portion***

| Standing period | Upper 100 ml. portion Stored at 40° F. | Stored at 50° F. | Remaining portion Stored at 40° F. | Stored at 50° F. |
|---|---|---|---|---|
| 24 hrs. | 4.144 | 4.203 | 4.016 | 3.999 |
| 48 hrs. | 4.288 | 4.416 | 4.035 | 3.994 |
| 72 hrs. | 4.379 | 4.507 | 4.018 | 3.974 |

*Test of well-mixed sample 4.044%.

**TABLE 4.—Relation of Storage Temperature to Test of Upper Ml. Portion of Quart of Homogenized Milk**

| Storage temperature | Test* of upper 100 ml. After 24 hrs. | After 48 hrs. |
|---|---|---|
| 40° F. | 4.077% | 4.201% |
| 50° F. | 4.174 | 4.459 |
| 60° F. | 4.170 | 4.460 |

*Test of well-mixed sample 3.985%

**TABLE 5.—Comparison of the Use of the Pipette and Siphon in Removing the Upper 100 ml. Portion of the Quart of Milk***

| Period of storage | Pipetted in 1 portion | Pipetted in 4 portions | Siphoned |
|---|---|---|---|
| 24 hrs. | 4.008% fat | 4.099% fat | 4.037% fat |
| 48 hrs. | 4.087 | 4.255 | 4.210 |
| 72 hrs. | 4.158 | 4.392 | 4.350 |

*Test of well-mixed sample 3.976%

**TABLE 6.—Curd Tension of Homogenized Milk and that Made from Homogenized Cream and Homogenized Skim Milk.**

| Product | Grams curd tension at indicated homogenizing pressure: No pressure | 500 Lbs. | 1000 Lbs. | 2000 Lbs. | 3000 Lbs. | 4000 Lbs. |
|---|---|---|---|---|---|---|
| Skim milk (0.5% fat) | 48 | 49 | 48 | 47 | 47 | 46 |
| 20% cream | 3 | 2.5 | 2 | 3 | 3 | 3.5 |
| 4% milk made from unhomogenized cream and skim milk and homo. at | 36 | 25 | 26 | 17 | 16 | 14 |
| 4% milk made from unhomogenized cream and **skim homo.** at | 37 | 37 | 41 | 33 | 32 | 32 |
| 4% milk made from cream homo. at 500 lbs. and **skim homo.** at | 30 | 32 | 31 | 32 | 26 | 28 |
| 4% milk made from cream homo. at 1000 lbs. and **skim homo.** at | 27 | 24 | 27 | 27 | 25 | 23 |
| 4% milk made from cream homo. at 2000 lbs. and **skim homo.** at | 24 | 24 | 27 | 24 | 24 | 21 |
| 4% milk made from cream homo. at 3000 lbs. and **skim homo.** at | 23 | 22 | 23 | 22 | 21 | 21 |
| 4% milk made from cream homo. at 4000 lbs. and **skim homo.** at | 22 | 23 | 22 | 20 | 21 | 21 |

**TABLE 7**
**Seasonal Trend in Curd Tension Readings and Percentage of Milk Solids Not-Fat in Milk Containing 4% Fat Monthly Averages of Daily Tests**

| Month | Avg. percent m. s. n. f. | | Average grams of curd tension | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Raw | | Pasteurized | | Homogenized | |
| | 1938 | 1939 | 1938 | 1939 | 1938 | 1939 | 1938 | 1939 |
| July | 8.93 | 8.88 | 59.9 | 55.0 | 52.4 | 46.0 | 13.5 | 11.2 |
| August | 8.93 | 8.92 | 64.3 | 59.0 | 54.2 | 48.0 | 15.6 | 13.0 |
| September | 9.00 | 8.94 | 65.7 | 59.7 | 59.8 | 49.6 | 16.4 | 13.3 |
| October | 9.13 | 9.06 | 62.7 | 56.6 | 50.0 | 52.4 | 17.5 | 14.35 |
| November | 9.13 | 9.05 | 61.5 | 56.6 | 56.0 | 51.5 | 15.3 | 15.5 |
| December | 9.04 | 9.10 | 57.6 | 53.0 | 52.6 | 49.3 | 14.0 | 14.3 |
| | 1939 | 1940 | 1939 | 1940 | 1939 | 1940 | 1939 | 1940 |
| January | 9.03 | 9.10 | 55.7 | 55.5 | 51.0 | 51.6 | 13.6 | 14.4 |
| February | 9.17 | 9.16 | 55.0 | 58.8 | 49.3 | 54.0 | 10.4 | 14.7 |
| March | 9.09 | 9.15 | 52.4 | 57.5 | 47.0 | 53.2 | 10.5 | 14.0 |
| April | 8.99 | 9.10 | 50.9 | 53.8 | 46.6 | 50.3 | 11.8 | 12.2 |
| May | 8.94 | 9.04 | 50.4 | 54.3 | 46.6 | 50.2 | 11.0 | 11.9 |
| June | 8.93 | 8.93 | 53.0 | 54.2 | 45.1 | 49.0 | 10.7 | 11.6 |

**TABLE 8**
**Relation of Homogenizing Pressure to Curd Tension**

| Pounds pressure of homogenization | Grams curd tension | |
|---|---|---|
| | Trial 1 | Trial 2 |
| None | 49 | 52 |
| 500 | 31 | 49 |
| 1,000 | 24 | 38 |
| 1,500 | 16 | 27 |
| 2,000 | 13 | 21 |
| 2,500 | 13 | 19 |
| 3,000 | 12 | 19 |
| 3,500 | 10 | 19 |
| 4,000 | 10 | 19 |
| 4,500 | 10 | 18 |
| 5,000 | 10 | 18 |

**TABLE 9**
**Effect of Heat Treatment Upon the Degree of Sedimentation in Milk Containing 4.4% Fat**

| | Pasteurizing Temp. °F. | Cell Count per ml. | Per cent Fat Upper 70 ml. | Degree of Sedimentation in millimeters |
|---|---|---|---|---|
| Unhomo. Sample | 143° F. | 1,197,560 | 25.5 | 0.0 mm. |
| | 175° F. | | 13.0 | 30.0 |
| | 205° F. | | 13.0 | 50.0 |
| Homo. Sample | 143° F. | 1,299,480 | 4.5 | 14.5 mm. |
| | 175° F. | | 4.5 | 37.0 |
| | 205° F. | | 4.5 | 52.0 |

**TABLE 10**
**Effect of Varying Homogenizing Pressures on Fat Rising, Degree of Sedimentation, and Cell Count After 48 Hours**

| | Upper 70 ml. portion* | | Lower 30 ml. portion** | |
|---|---|---|---|---|
| Homo. pressure | Percent fat | Cell Count per ml. | Cell Count per ml. | Degree of Sedimentation |
| No pressure | 25.90 | 1,620,000 | Not enough to count | 0 |
| 1,000 lbs. | 4.77 | 258,000 | 1,030,000 | 3.5 |
| 2,000 lbs. | 4.20 | 220,000 | 1,050,000 | 3.75 |
| 3,000 lbs. | 3.96 | 190,000 | 970,000 | 3.87 |
| 4,000 lbs. | 3.83 | 170,000 | 850,000 | 3.87 |

*Control sample contained 3.82% fat and 215,000 cells per ml.
**As the pressure of homogenization increased, there were less countable cells present in the lower 30 ml. portion. Occasionally there appeared to be broken-down cells present, but these were so ill-defined that counting them was not attempted.

**TABLE 11.—The Composition of the Sediment in Milk Homogenized at Different Pressures**

| Homogenizing Pressure | Weight of Sediment | Percentage Ether Soluble | Percentage of Protein | Percentage of Ash | Undetermined |
|---|---|---|---|---|---|
| 500 lbs. | 0.3058 gms. | 24.30% | 40.91% | 30.20% | 4.59% |
| 1,000 | 0.5275 | 24.80 | 44.31 | 21.75 | 9.14 |
| 2,000 | 0.5544 | 24.10 | 47.47 | 19.10 | 9.33 |
| 3,000 | 0.5665 | 20.90 | 48.85 | 18.10 | 12.15 |
| 4,000 | 0.4289 | 24.80 | 50.02 | 18.00 | 7.20 |

**TABLE 12.—Effect of Adding Salts to Milk on the Degree of Sedimentation***

| Sample | Cell Count per ml. | Degree of Sedimentation in Millimeters |
|---|---|---|
| Unhomogenized—control | 535,080 | 1 mm. |
| Unhomogenized— .2% Sodium citrate added | 573,300 | 1 |
| Unhomogenized—.02% Calcium chloride added | 522,340 | 7 |
| Homogenized—Control | 535,080 | 9 mm. |
| Homogenized—.2% Sodium citrate added | 573,080 | 7 |
| Homogenized—.02% Calcium chloride added | 522,340 | 16 |

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*The degree of sedimentation was measured as follows: Quart bottles of milk after standing at 40° F. were siphoned of enough of their contents to leave approximately 30 ml. on the bottom of each bottle. The bottle was then capped and shaken. About 15 ml. of the material was placed in a specially constructed centrifuge tube and centifuged at 880 r.p.m. for five minutes. The top layer was then decanted. The second 15 ml. portion of sample was then added and centrifuged for five minutes. The top layer was again decanted and distilled water was added. The tube was then centrifuged for three minutes. The amount of sediment in the bottom tube was then measured using the millimeter scale.

**TABLE 13.—Effect of the Type of Fat on the Degree of Sendimentation in Milk**

| Sample | Degree of Sedimentation in millimeters |
|---|---|
| Unhomogenized whole milk | 0.0 mm. |
| Homogenized whole milk | 3.5 |
| Skim milk and soybean oil unhomogenized | 0.0 |
| Skim milk and soybean oil homogenized | 4.0 |

**TABLE 14.—Removal of Cells by Filtration**

| Samples | Millimeters of Sediment in Homogenized Milk | Cell count per ml. | % Reduction in cells |
|---|---|---|---|
| Unfiltered—52° F. | 4.50 | 761,000 | |
| Unfiltered—90° F. | 4.75 | 955,000 | |
| After filtration at 52°F. | | | |
| Using filter cloth | 4.25 | 683,000 | 10.0 |
| Using filter pad | 4.50 | 733,500 | 3.6 |
| After filtration at 90°F. | | | |
| Using filter cloth | 4.75 | 955,500 | 0.0 |
| Using filter pad | 4.75 | 955,500 | 0.0 |

**TABLE 15.—Comparison of Filtration and Clarification from the Standpoint of the Removal of Cells from Milk**

| Samples | Cell Counts per Ml. | | Per Cent Reduction in Cells |
|---|---|---|---|
| **Untreated** I | 1,280,000 | | |
| II | 2,085,000 | | |
| III | 350,000 | | |
| **After Clarification** | | | |
| I | 450,000 | | 66.0 |
| II | 890,000 | | 57.3 |
| III | 205,000 | | 41.5 |
| | | Average | 54.9 |
| **After Filtration** | | | |
| I | 1,450,000 | | —13.25 |
| II | 2,020,000 | | 3.10 |
| III | 450,000 | | —28.6 |
| | | Average | —12.9 |

**TABLE 16.—Comparison of the Clarifier and Separator Units on the Same Machine as to the Efficiency of Cell Removal and Reduction in the Degree of Sedimentation of Homogenized Milk**

| Sample of Milk | Cell count per ml. | Percentage Reduction | Degree of Sedimentation in Millimeters |
|---|---|---|---|
| Before treatment | 547,820 | | 4.0 |
| After clarification | 216,580 | 60.46 | 2.0 |
| After separation and remixing | 267,540 | 51.76 | 2.0 |
| Before treatment | 646,555 | | 9.5 |
| After clarification | 238,875 | 63.0 | 5.5 |
| After separation and remixing | 318,500 | 50.7 | 5.5 |

**TABLE 17.—Effect of Clarification Before and After Homogenization from the Standpoint of Cell Removal**

| Sample of Milk | Cell Count per ml. | Percentage Reduction from Total | Degre eof Sedimentation in Millimeters |
|---|---|---|---|
| Before clarification | 1,041,495 | | 11.0 |
| Clarified before pasteurization and homogenization | | | |
| 1st clarification | 586,040 | 43.6 | 9.0 |
| 2nd clarification | 343,980 | 67.2 | 3.0 |
| 3rd clarification | 216,580 | 79.0 | 3.0 |
| Clarified after pasteurization and homogenization | | | |
| 1st clarification | 445,900 | 57.2 | 8.0 |
| 2nd clarification | 203,840 | 80.4 | 1.0 |
| 3rd clarification | 152,880 | 85.2 | 0.5 |

**Table 18**

**The Efficiency of Separation* Before and After Homogenization from the Standpoint of Cell Removal**

| Sample of milk | Cell count per ml. | Percentage Reduction | Degree of Sedimentation in Millimeters |
|---|---|---|---|
| | **Trial 1** | | |
| Before separation | 1,758,120 | | 12.0 |
| Sep. before homo. | 891,800 | 49.2 | 9.0 |
| Sep. after homo. | 280,280 | 84.1 | 3.0 |
| | **Trial 2** | | |
| Before separation | 2,114,840 | | 15.0 |
| Sep. before homo. | 445,900 | 78.9 | 5.5 |
| Sep. after homo. | 222,950 | 89.4 | 2.0 |

*In trial one the separator was set to separate a cream of 34% fat. In trial 2 the test of the cream was 43%. Separation took place at 90° F.

**TABLE 19**

**The Efficiency of Cell Removal from Milk When the Velocity of Milk Flow is Varied in an Airtight Clarifier**

| Sample | Cell Count per ml. | Per cent Reduction |
|---|---|---|
| 1. Clarified — 3500 lbs. per hr. first and 6000 lbs. per hr. 2nd | | |
| Before clarification | 925,000 | |
| After clarification—3500 lbs. per hr. | 254,000 | 72.2 |
| After clarification—6000 lbs. per hr. | 407,500 | 56.0 |
| Before clarification | 700,000 | |
| After clarification—3500 lbs. per hr. | 242,000 | 65.8 |
| After Clarification—6000 lbs. per hr. | 345,000 | 50.4 |
| 2. Clarified — 6000 lbs. per hr. first and 3500 lbs. per hr. 2nd | | |
| Before clarification | 618,000 | |
| After clarification—6000 lbs. per hr. | 242,000 | 61.0 |
| After clarification—3500 lbs. per hr. | 191,000 | 69.5 |
| Before clarification | 740,000 | |
| After clarification—6000 lbs. per hr. | 407,500 | 45.0 |
| After clarification—3500 lbs. per hr. | 280,000 | 62.0 |

**TABLE 21**

**Effect of Homogenization Upon Bacterial Count of Pasteurized Milk (low count raw milk used)**

| Sample | Bacteria per ml. | | | | | | | | | | | | | Average 13 trials |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| **Part 1—Homogenizer A Used** | | | | | | | | | | | | | | |
| From vat | 700 | 2190 | 1470 | 560 | 270 | 1170 | 1580 | 1690 | 860 | 870 | 1480 | 560 | 2310 | 1210 |
| First milk through homogenizer—no pressure | 860 | 2140 | 1820 | 450 | ..... | 1740 | 2360 | 1800 | 1220 | 1670 | 3380 | 1860 | 4470 | 1980 |
| Unhomogenized, beginning of run | 540 | 2540 | 1240 | 300 | 380 | 1210 | 1590 | 1460 | 1010 | 1060 | 1250 | 580 | 2210 | 1182 |
| Homogenized, beginning of run | 720 | 3250 | 1810 | 460 | 670 | 1780 | 2020 | 2150 | 2520 | 2350 | 3300 | 1280 | 3400 | 1990 |
| Unhomogenized, middle of run | 610 | 2560 | 1550 | 200 | 310 | 1170 | 1670 | 1310 | 840 | 980 | 1410 | 570 | 1920 | 1158 |
| Homogenized, middle of run | 630 | 3280 | 1790 | 260 | 430 | 1510 | 2130 | 1660 | 1060 | 1150 | 2250 | 800 | 2450 | 1510 |
| Unhomogenized, end of run | 760 | 2750 | 1550 | 260 | 260 | 1120 | 1640 | 1350 | 950 | 1010 | 1320 | 540 | 1840 | 1180 |
| Homogenized, end of run | 790 | 2700 | 1720 | 280 | 370 | 1620 | 2260 | 1490 | 1100 | 1140 | 1760 | 830 | 2360 | 1418 |

**Part 2—Homogenizer B Used**

| Sample | Bacteria per ml. | | | |
|---|---|---|---|---|
| | 1st day | 2nd day | 3rd day | Average |
| From vat | 1570 | 940 | 1080 | 1200 |
| From line | 1560 | 890 | 1010 | 1150 |
| Through homogenizer, no pressure | 1940 | 1680 | 1170 | 1600 |
| Homogenized 2000 lbs. pressure | 2170 | 1250 | 1480 | 1630 |
| From line middle of run | 1470 | 930 | 1120 | 1170 |
| Homogenized middle of run | 2020 | 1190 | 1610 | 1610 |
| From line end of run | 1600 | 860 | 1200 | 1220 |
| Homogenized end of run | 1810 | 1230 | 1650 | 1590 |

TABLE 20

Reduction in the Degree of Sedimentation in Homogenized Milk When That Milk is Clarified at Different Temperatures

| Sample | Cells per ml. | % Reduction | Degree of Sedimentation in Millimeters |
|---|---|---|---|
| Before clarification | 291,100 | | 5.5 |
| After clarification at 64° F. | 176,955 | 39.2 | 2.0 |
| After clarification at 90° F. | 141,475 | 51.5 | 1.0 |
| After clarification at 120° F. | 100,885 | 65.5 | 1.0 |
| Before clarification | 850,000 | | 17.0 |
| After clarification at 74° F. | 510,000 | 40.0 | 11.0 |
| After clarification at 90° F. | 433,160 | 49.2 | 10.0 |
| After clarification at 116° F. | 343,980 | 59.2 | 9.5 |

TABLE 22

Fat Test on Homogenized and Unhomogenized Milk as Determined by the Babcock and Mojonnier Methods

| Percent fat in homogenized milk | | Percent fat in in unhomogenized milk |
|---|---|---|
| Babcock | Mojonnier | Babcock |
| 4.00 | 3.97 | 4.00 |
| 3.90 | 3.93 | 3.90 |
| 4.00 | 3.97 | 4.00 |
| 4.05 | 3.02 | 4.05 |
| 4.10 | 4.05 | 4.10 |
| 4.10 | 4.06 | 4.10 |
| 3.70 | 3.60 | 3.70 |
| 4.10 | 4.06 | 4.10 |
| 4.10 | 4.09 | 4.10 |
| 4.10 | 4.08 | 4.10 |
| 4.00 | 4.04 | 4.00 |
| 4.00 | 3.93 | 4.00 |
| 4.10 | 4.08 | 4.10 |
| 4.00 | 3.96 | 4.00 |
| 4.00 | 3.97 | 4.00 |
| 4.05 | 3.98 | 4.05 |
| 3.95 | 4.91 | 3.95 |
| 4.05 | 4.02 | 4.05 |
| 4.00 | 3.98 | 4.00 |
| 3.95 | 3.97 | 3.95 |
| Average 4.0125 | 3.9845 | 4.0125 |

## New Cream Can Washer

Members of the creamery industry met at Kansas City recently for a preview of the new Centri-flo washer for cream cans and other utensils. This washer was developed by the Gordon Johnson Co., 2519 Madison Ave., Kansas City.

The object was to design a means of scrubbing the inside of a cream can with hot water and soap.

Left to right: Ralph Zeharth, Gordon Johnson Co.; V. L. Turgasen, Armour; Gordon Johnson, Gordon Johnson Co.; J. D. Ingle, Swift & Co.; G. W. McLatchey, American Dairies; C. J. Steck, American Dairies; O. W. Woodyard, Cudahy & Co.; L. H. Rickman, Harding Cream Co.; E. W. Reed, American Dairies; G. W. Shadwick, Beatrice Foods; Mr. Richardson, Harding Cream Co.

The scrubbing unit in the Centri-flo washer is a strip of resilient rubber with a pattern of small fingers on each side. This rubber strip is mounted on a horizontal shaft. Centrifugal force causes the strip to stand outwardly when the machine is in operation. When a cream can is pushed over the whirling scrubber, it readily conforms to the size and shape of the neck, expanding as it travels through the shoulder, cleaning the seams of the can, down the sides and at the bottom.


Another

STAMSVIK First FILTER

• A center tie rod of open fluted construction and open end core nut. **ALL STAINLESS STEEL**, of course. Simple heavy construction . . . the ultimate in easy cleaning and sanitation. Interchangeable for replacement use in all earlier filter models. See your dealer or write direct for details of our All Stainless Steel Filter Program.

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These "Rubberseal" gaskets protect bevelled sanitary fittings. Stop leakage of air and product. Unharmed by high temperatures. Easy to clean. Long Life. Can be re-used many times.

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trendmaker in a great industry

# How to Compute
# BOTTLE TRIPPAGE

**Non-Return of Bottles Is a Problem in South Africa as Well as in the United States — Recover 10,000 Containers from Municipal Refuse Dump**

TO COMPUTE BOTTLE TRIPPAGE from month to month, you should know the number of bottles in circulation. As long as a consistent method is used for this calculation, the results obtained will be quite reliable. Bottle trippage is figured by dividing the number of bottles placed in service in any given period, into the number of bottles sold during that period. The only other item to consider is the fluctuation in bottle inventories.

An example: "Let's assume that a dairy sold 10,000 bottles per day in April and 10,500 bottles per day in May; that there were 12,000 bottles in stock on 30th April and 10,720 bottles in stock on 31st May. During May, 80 gross or 11,520 bottles were purchased. It is estimated that there are seven bottles in circulation for every bottle sold per day. To calculate the number of bottles in circulation, multiply the average number of bottles sold per day by seven.

Bottle trippage for May would then be computed as follows:—

| | | |
|---|---|---|
| Opening inventory — 1st May | | |
| a. Bottles in stock | 12,000 | |
| b. Bottles in circulation (7 x 10,000 — average daily sales for April) | 70,000 | |
| Total bottles in stock and in circulation 30th April | 82,000 | |
| Plus bottles purchased in May (80 gross) | 11,520 | |
| TOTAL | | 93,520 |
| Closing inventory — 31st May | | |
| a. Bottles in stock | 10,720 | |
| b. Bottles in circulation (7 x 10,500 — average daily sales in May) | 73,500 | |
| Total bottles in stock and in circulation 31st May | | 84,220 |
| Number of bottles lost or broken | | 9,300 |

Number of bottles sold in May:
31 x 10,500 = 325,500. Divided by 9,300 (bottle loss) = 35 trips

In the case of dairies with small volume, a more accurate bottle trippage figure can be obtained by using a three-month figure instead of one month. The same formula is used. Attention to this vitally-important aspect of milk distribution will be amply repaid in savings effected and in a material reduction in the costs of distribution. In our experience, it is perhaps the mostly sadly neglected aspect of the milk business in the larger centres of the Union. In some cases we found that there was no idea of what trippage a dairy was obtaining and, what was worse, there was no anxiety felt about this grave omission. The world shortage of soda-ash continues, and bottles are still not as plentiful as they might be. A little Milk Bottle Economics would be a welcome innovation in quite a number of our distribution depots.

### Heavy Bottle Losses Reported

During the war years control of milk bottles under the Emergency Regulations had the effect among other things, of eliminating the colossal wastage through loss or non-return. The fact the no bottles were left at the time of delivery meant that there was no bottle loss, except through breakages. Previously the wastage caused by non-return of bottles to the depot had reached astronomical proportions. Unfortunately, the trade appears to be fast returning to that unhappy state of affairs, and the loss through this cause is already making itself seriously felt.

One prominent Johannesburg distributing company alone has computed its present loss through non-return of bottles at no less than £2,000 per annum. On a recent survey in the city an investigator found his company's bottles being used by fifteen different competing depots and in one case a retail delivery employee was found to be in possession of over twenty bottles belonging to his firm! This is a deplorable state of affairs and one which should be speedily remedied. It is, of course, an offense to use bottles belonging to another depot, and a representative of the company concerned, interviewed, made it clear that preceedings for the prosecution of the offenders would be instituted if they persist in this flagrant abuse.

Reports from various centres indicate that the illegal practice of using bottles belonging to other depots is becoming an increasingly serious problem.

Indicative of the average householder's apathy in this regard is the fact that at the present time between ten and twelve thousand milk bottles are being sorted from the refuse dump by the Johannesburg Municipal authorities for return to their owners. The milk distributive trade must pay heavily for its carelessness in regard to the return of bottles.

Reprinted from May Issue of The South African Dairyman.

### BRITISH BATTLE FOR BOTTLES

The tragic wastage of milk bottles at a time when glass manufacturers are being forced to concentrate on provision of new deliveries, and dairymen everywhere complain of shortage, has been stressed in Edinburgh this week. There, according to the Cleansing Department, approximately one thousand milk bottles a week are being thrown into ash buckets. Over 10,000 bottles were received at the depot of the Cleansing Department in two months—and this despite the fact that many milkmen have compelled customers to pay a deposit of 3d per bottle. At present bottles are graded, washed and sterilized at the depot and until recently the Department had a contract for the sale of milk bottles. This was terminated, however, following differences of opinion over prices and the standard of cleansing, and the probability is now that the bottles may be broken down and melted.

## "We'll Take The Package"

### Recent Sealright Survey Reveals Heavy Dealer Preference for Factory Packaged Ice Cream — Brand Names Are Important

A SURVEY OF ICE CREAM retailing in four large cities representing the South, the Mid-west, and two regions of the East gives further indication of the extent to which dealer preference has swung to factory-packaged over bulk dip ice cream for the take-home trade. The vote was 4 to 1 for packaged over bulk in the survey of drug stores, confectionery stores, groceries and super markets.

The survey has been made recently by A. S. Bennett Associates of New York for Sealright Co., Inc., covering all phases of ice cream retailing.

The four cities were combed extensively for all three of the main classifications of ice cream dealers: the drug stores, confectionery stores, the groceries and super markets. Owners or managers of 95 per cent of the stores co-operated with the interviewers in going through the three-page questionnaire. Three-fourths of the stores included in the survey are in neighborhood shopping sections and one-fourth in the down-town business districts.

Of all the stores: 63.5 per cent handle packaged ice cream only: 33.7 per cent handle both packaged and bulk which they dip for take-home; 2.8 per cent handle bulk only. Of those handling both packaged and bulk: 57 per cent of the owners said that they prefer to handle packages, 29.3 per cent said they have no preference, and 13.6 per cent said that they prefer bulk.

"Easier to handle, and quicker" predominated among reasons given for the preference for handling pre-packaged ice cream.

#### Room For Argument

Some confusion is still indicated by the opinions on comparable profits between packaged and bulk. The big pre-package contingent cited saving of labor and definite measure of volume and profits when dealing in packages. The relatively small number of bulk advocates still believe there is more money in dipping for the take-home trade.

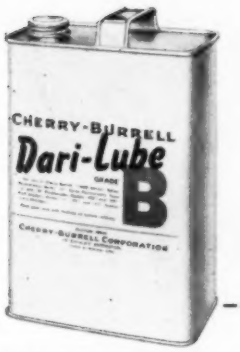
Drug stores voted for packaged ice cream 7-1, and confectionery stores voted for it 2-1. As is to be expected, only three of the groceries and super markets dealing in ice cream in the four cities are handling bulk.

In the replies on quality, manufacturers of packaged brands also came off well. In reply to the question—"do your customers feel that quality of packaged ice cream is as good as it should be?"—three-fourths of the store owners said "yes." "Yes" was 2-1 in drug stores, 8-1 with grocers, and more than 3-1 with confectioners.

The replies as to brand preference indicate that trade mark merchandising opportunities are still wide open. Only 37.4 per cent of the stores said customers sometimes expressed a preference for a particular brand of ice cream.

More than two-thirds of the dealers reported that their ice cream manufacturers gave them advertising support. Display material is the type of advertising mentioned most often.

These retail dealers estimated in the aggregate that three out of every four customers who entered their stores and purchased ice cream had intended to purchase it when they came into the store. Many of the store owners agreed that the job of creating impulse buying of ice cream, as against competitive foods, is largely one that has yet to be done.


Don't take CHANCES
Use
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Haphazard lubrication of your Cherry-Burrell equipment can cause a lot of trouble. Don't risk expensive breakdowns, repairs, and replacements. Cherry-Burrell Dari-Lube oils and greases will give you SAFE lubrication.

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Certified MILK
gives you the distinction of telling your customer you voluntarily submit to regulation of the Medical Profession.
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# *New York Celebrates*
# FIFTEENTH ANNIVERSARY

*The profound influence of Federal and State milk marketing control on the fluid milk industry is one of the great developments of our era. Born in the depression years the system of market control has grown through the war years and the present period of inflation. In this article Chester Dumond, Commissioner of Agriculture in New York States takes a peek at history on the occasion of the fifteenth anniversary of milk control in the Empire State.*

●

ALTHOUGH MILK CONTROL, as we think of it today, is fifteen years old in New York State, some of its provisions date back nearly 65 years. The dairy laws of our state have grown and changed to meet changing conditions in our basic dairy industry. Our ability to face these changing conditions, and to modify our thinking accordingly, is a fine example of our democratic processes; and while our milk control laws today are not considered by anyone to be perfect, I'm as thankful as you are that we have them.

When I say that our dairy laws have been built up over a span of more than half a century, I am thinking primarily of such essentials as those dealing with standards for milk and milk products and for preventing their adulteration and of some of the licensing provisions. Enforcement of the dairy laws . . . and that includes our milk control statutes, as we have come to call our more modern additions . . . is, to my mind, one of the great services being performed by the federal and state Departments of Agriculture for the people who live in New York State. And those people, of course, are the producers of milk, the handlers of milk and the consumers of milk. That takes in all of us.

Probably no single document describes more graphically than does the Pitcher Report the situation in which our dairymen found themselves before milk control came into existence. It is a story of privation; of ruinous prices paid to farmers for milk produced by long hours of hard work; of price cutting by dealers to a point where some of them could no longer meet their obligations . . . a story of dairy farmers who in many instances were not able to provide necessities of life for their families . . . a story of lost farms and homes and life-time savings.

Impoverishment of our dairymen was reflected in the business life of the small towns and, in turn, in the cities.

Under such conditions milk control was born. It was born of necessity because it is the state's responsibility to see that its citizens are provided with an adequate supply of wholesome milk. Conditions of that day in our dairying areas seriously threatened the vital milk supply.

On April 13, 1933 . . . just three days after the law creating it went into effect . . . the Milk Control Board conducted its first public hearing. But even as the Board met to consider the plight of the dairy industry, price cutting actually gained momentum. I am told that there was a frantic rush by several dealers to add every possible customer, even at a temporary loss, in the belief they would be able to hold all those customers when the Board fixed the selling price of milk.

**MAY PRODUCTION DOWN**

Milk production on U. S. farms during May was estimated this week at 11.8 billion pounds. Smallest for the month since 1941 the total was 2.4 percent less than last year. Yet it was the closest approach to the 1947 level for any month this year. During the first four months of 1948 output had averaged 4.5 percent below last year.

Production per cow during May had set a new record for the month. Good pastures, liberal concentrate feeding, favorable weather had contributed to the heavier flow of milk.

The need for action was so urgent only four more days elapsed before the Milk Control Board's first orders became effective. Those orders, many of you will recall, fixed the minimum prices that dealers could charge consumers, that dealers could charge stores and that stores could charge their customers in every town in the state with more than a thousand inhabitants. Although the minimum price of home-delivered milk was 10 cents a quart, there was more than a glimmer of hope for the farm producers of milk inasmuch as the Board decreed that the financial benefits of its stipulated minimum prices should go to the producers.

But the relief sought for the dairy farmer was not forthcoming, and the Board was quick to recognize that producer minimum prices were absolutely essential. And so the Board adopted the classified price plan on May 16, 1933. The producer price for class 1 milk was $1.88—not much by today's standards, but a 60-cent increase for the dairymen of 1933.

Well, a good many of you probably remember the drought of that summer with its resulting lower milk production, higher feed costs and then the dealers' complaints that their costs were climbing upward. Unreasonable demands were made upon the Milk Board by some of the producers—the Board's report for that year says the group of producers wanted 45% of whatever the consumers paid—and the Board's inability to meet them was followed by the August milk strike. Maybe the less said about that, the better.

About that time there began to be talk about a federal marketing agreement for the New York City metropolitan area. Something was done about it when the Committee of 18 came into being. However, there were disagreements in Washington which nullified the committee's work, for that time at least. Milk from other states was coming into New York and disturbing the market, so much so in fact that the help of the courts was sought. But that was only the beginning of a long series of court tests and reviews, a number of which went all the way to the Supreme Court of the United States and covered names now familiar in the history of milk control. There was scarcely a disputed point in the whole chain of control links that wasn't dragged into court by one

side or the other as the legal tug-of-war progressed. Truly it was a long and baffling process through the intervening years, but I am certainly convinced the results we have today were well worth all the struggle they cost.

The Milk Board's report to the Governor and Legislature in March 1934 bluntly recognized the difficulties of enforcing resale prices of milk. It told of secret rebates, schemes for falsifying the records and other devices which made it appear almost from the start that without the co-operation of the milk dealers the road would be hard if not impossible. In spite of everything the Board could do, it acknowledged at the end of the first year that the price structure was being demoralized.

The 1934 Legislature created the Division of Milk Control in the Department of Agriculture and Markets. This succeeded the Milk Control Board and took over the dairy functions of our Dairy and Food Bureau. I can say in all sincerity that it accomplished and is still accomplishing a job that every one of us can take pride in.

Surmounting the problems of milk control has been an endless task highlighted by tests in the markets and in the courts followed by many changes in the original intentions. Experience has taught most of the things which we take almost for granted today. You will recall that the Supreme Court in 1935—in the Seelig case—held that the Division of Milk Control could not prevent the sale in this state of milk purchased by a dealer in some other state, just because that dealer in paying producers had used a rate lower than the minimum rate established here. Well, the governors of the seven states comprising the New York metropolitan milkshed got together and the Governors' Committee was organized to seek the cooperation of the federal government in controlling interstate milk traffic. The committee ran into the ups and downs which seem to go hand in hand with the milk business.

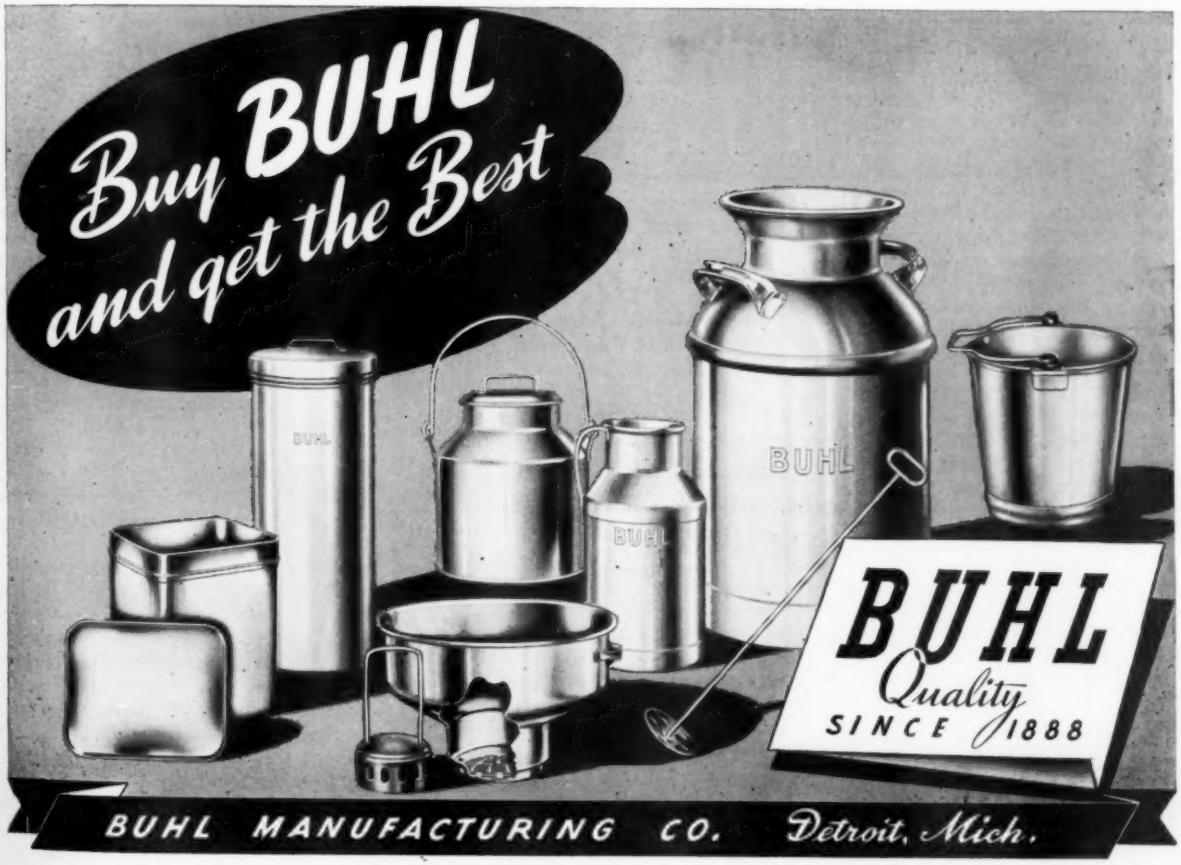
**MILK RATION HALTS**

London, England—The Ministry of Food announced the unrestricted sale of milk for three weeks. It will be the first time in nearly 10 years of rationing for milk to go on the free list. High milk yields due to good weather permitted the relaxation, the food ministry said. The usual weekly adult ration is 2½ pints.

It was not until September 1, 1938 that the federal order regulating the handling of milk in the New York metropolitan marketing area came into existence. It operates jointly with a state order, and together they have reduced chaos to an orderly business procedure. We are here tonight to commemorate the first ten years of successful operation of the joint orders.

Another thing had an important bearing on the low prices prevailing when Milk Control was introduced. I am speaking of what some of our dairymen then called "over production." Of course we know now that it was under consumption, not over production, and we saw production grow in 1947 to more than eight billion pounds on our New York farms. Consumption has paced production, maybe because our men and women who were in service learned to like milk and want more of it; perhaps because milk is an economy food; but more likely because we have all gotten more good common sense and appreciate the taste and nutritional value of milk accordingly.

A study of milk records shows the increase in the average price per hun-



dred pounds and the total amount of money received by milk producers during the years of milk control, but all of us realize only too well that while receipts have been going up so have costs of production. Everything that enters into the production costs much more today than it did fifteen years ago. Every farmer knows it but, unfortunately, there seem to be many people who aren't farmers who think the dairyman is getting rich. If they could just see what we pay out for feed, for labor, for machinery and for everything else perhaps they would realize that Old Man Cost of Living plays no favorites!

Authority to fix producer and resale prices of milk expired on March 31, 1937 and then came the Rogers-Allen law placing responsibility in the hands of bargaining agencies for initiating steps leading to the fixing of producer prices. Our first order, of course, was the New York order concurrent with an almost identical order issued by the United States Secretary of Agriculture.

Almost on the heels of the New York Order came the Buffalo order, and by the same procedure as provided in the Rogers-Allen law. The Buffalo order went into effect October 1, 1938. Then there was more trouble. Some of the boys didn't intend to comply with the orders, both state and federal, and long court litigation followed.

The case by which the Supreme Court of the United States decided the constitutionality of the Federal order was known in milk circles as "the Rock Royal case." No need to go into details for the high court upheld the act. In the State courts the Department was fighting to obtain compliance with the Buffalo order. That came to be known as "the Landel case" and, as in the battle in the Federal courts, there were reverses in the lower courts before the higher judiciary finally decided everything was right and proper.

Voluntary agreements were sought in the meantime, but they failed early in 1939, with the result that milk in New York City dropped 2½ cents a quart—the sharpest decline on record in that market. The farm price went down accordingly, and the turmoil in the metropolitan area was reflected in upstate markets. The situation was quite a mess until June when the Supreme Court handed down its "Rock Royal" decision and the Federal Order was reinstated. Its stabilizing effects were noticeable virtually overnight. But that didn't mean returns to producers were satisfactory—not by any means.

A petition by the Metropolitan Cooperative Milk Producers Bargaining Agency on August 4, 1939 caused the state and federal authorities to call hearings for consideration of price-order amendments, but before the hearings were scheduled came the mid-August strike by the Dairy Farmers' Union. You remember the bitterness and violence of that strike. A lot of milk was dumped, so much so that by August 18 the milk supply reaching New York City was reduced by 35 to 40 per cent. Mayor LaGuardia intervened, induced the warring factions to sign a truce. The public hearings were held on schedule and order prices were increased. December 1 of that year saw the Rochester order go into effect, similar in many respects to the Niagara Frontier order.

### ELECT OWEN D. YOUNG

Owen D. Young, Van Hornsville, New York, an outstanding figure in the post war world of the twenties was chosen president of the Holstein-Friesian Association at the sixty-third annual convention of the organization held in Kansas City last month.

Other officers elected by the convention include S. B. Hall, Troutdale, Oregon, Vice-President; H. W. Norton, Jr., Brattleboro, Vermont, Executive Secretary; Glen M. Householder, Brattleboro, Vermont, Director of Extension Service.

New board members include Carl G. Wooster (retiring president), Union Hill, N. Y.; Frank Pellissier, Whittier, Calif. (re-elected); Howard Clapp, Oconomowoc, Wisconsin (to fill vacancy created by John Wuethrich, Greenwood, Wisconsin, resigned); T. H. Benton Blairstown, N. J.; and T. Hobart McVay, Nickerson, Kansas.

Following the annual banquet Wednesday evening, the convention turned out for the National Convention Sale Thursday (June 3) in which 71 animals sold for an average of $1,250 a head, with the top female, Pabst Reburke Rag Apple, bred heifer consigned by Pabst-Knutson, Oconomowoc, Wis., bringing $4,500 to top the sale. She was purchased by Signor Jose Leon, Buenos Aires, Argentina.

The upstate orders, which are administered solely by the state, and the New York order have been changed any number of times, not only for clarification but to meet requirements as they presented themselves. Virtually every change has been made to provide fair and equitable returns to dairymen that they might continue an adequate flow of milk to our consumer.

As we converted from a wartime to a peacetime economy, the year 1946 brought a number of important changes, first and foremost of which was the discontinuance of the OPA prices and the end of subsidy payments. The rate of subsidy was 55 cents a hundred during June, the last month of OPA, and at least 75 cents had been promised for July. Despite the loss of subsidies there was no evidence that the Federal government would grant any immediate increases in milk prices under the New York order. I acted as mediator at a meeting of producers and dealers, at their request, and prices above the minimum in the order were agreed upon. Amendments to the order, effective September 1, did away with the further necessity for agreed prices.

Soon afterward we began to experience difficulty with the butter-dry skim formula on which milk prices were computed, so floors were established below which the class prices were not permitted to drop. That situation rapidly led to the conclusion that we need a new working basis for arriving at producer prices for milk—a basis that will take into consideration costs of the production operation as well as the general commodity price level. Perhaps we are on the way to that.

We have seen receipts of milk at New York plants climb from 5,358,000,000 pounds in 1934 to approximately seven billion pounds last year. In that same period of time producer prices rose from $1.68 to an average price of $4.47 for average test milk last year. In spite of this tremendous increase in the production and consumption of milk, our present orders and our present milk laws have maintained a stability in the marketing of milk which has been profitable to everyone concerned. Our marketing orders were designed to take care of the merchandising of milk when we had more milk produced than could be profitably disposed of. They met that situation, but they have also shown their value through recent periods when our entire output of milk was in great demand. I see no reason why, with proper amendments to meet unforeseen situations which may arise, these orders should not continue to serve the best interests not only of the producer but also of the distributors and the consumers.

It is a pleasure to participate in this tenth anniversary celebration to congratulate those of you who were instrumental in creating these orders; and may I predict a continuation of satisfaction from the orders under which everyone who contributed to the production or distribution of fluid milk can receive the incentive of a reasonable profit and where our consumers can be assured of a plentiful supply of that fluid which is next to water as a necessity for our everyday life

# Bay State Dairy Classic

## University of Massachusetts Students Hold Second Annual Show — Dorchester Man Wins Feature

THE SECOND ANNUAL Bay State Dairy Classic was held recently at Grinnell Arena, on the Campus of the University of Massachusetts.

This is a comparatively new name for this event, having been adopted last year. In the past, it was known as the "Dairy Cattle Fitting and Showing Contest", of which this is the fourteenth performance.

This year's event was sponsored by the Sophomores in the Division of Agriculture, under the direction of John M. Kingsbury, of Framingham. Professor Richard C. Foley was the Faculty Adviser.

Fifty-one students participated in the four classes that were judged by Profesor A. I. Mann and Mr. Donald Mercer, both of the Ratcliffe-Hicks School of Agriculture, University of Connecticut.

The superbly trained and handsomely groomed heifers spoke well of the long hours of work and patience that preceded the event, and also of the excellent help given the students by Herdsman William Smith.

The main event of the day was the Premier Showmanship Contest in which the winners of the various classes vied for the top honor of the day. The winner was Raymond W. Campbell of Dorchester, and this was his first attempt at showing livestock.

Howard D. Stowe of Colrain, was second place. He won the Premier Showmanship 2nd Award at the 1947 "Little International" Live Stock Show.

**Left to right: John M. Kingsbury, Framingham, Mass., chairman of student committee; Donald Mercer, Stockbridge Class of '37 as judge, from the Ratcliffe-Hicks School of Agriculture, University of Connecticut; A. I. Mann, Judge, also from the Ratcliffe-Hicks School of Agriculture. Roland Verbeck, Director of Short Courses, University of Massachusetts, and Raymond W. Campbell, Dorchester, winner of Premier Showmanship award.**

**The winning heifer shown here is Bay State Avis.**

Third Place went to Horace D. Milliken of Dedham. Fourth and Fifth Places went to George Clark, Jr., of Tolland and Theodore Chase of Sheffield.

The winners of the various classes were as follows:

Class 1. **Jersey and Milking Shorthorn Heifers**
1st Place—Raymond W. Campbell, Dorchester
2nd Place—Theodore Chase, Sheffield
3rd Place—Roger W. Lawrence, Winchendon

Class 2. **Holstein Heifers**
1st Place—Douglas G. Ross, Lexington
2nd Place—Langdon Prouty, Jr., Littleton
3rd Place—Clifton Waugh, Braintree

Class 3. **Guernsey Heifers**
1st Place—Howard D. Stowe, Colrain
2nd Place—John J. Ross, West Cummington
3rd Place—George Clark, Jr., Tolland

Class 4. **Ayrshire Heifers**
1st Place—Horace N. Milliken, Dedham
2nd Place—Paul R. Wilson, Hyde Park
3rd Place—Miss Lois M. Rinehart, Weston


# Chocolate Milk Made With Bradway's

## CHOCOLATE FLAVORED SYRUP

No. 10 tin, above, dressed up in a new package design, is convenient size for your use or your customers'. BRADWAY Chocolate Flavored Syrup also comes in 5-gallon pails and in home-size (12 oz.) jars for sale through your retail outlets.

*Tastes better! Sells faster!*

Summer time is selling time for chocolate milk because long play hours for the youngsters burn extra energy and build extra hearty appetites. You'll add new customers to every route . . . increase deliveries to every customer, when your chocolate milk is made with BRADWAY Chocolate Syrup.

BRADWAY syrup is rich in nourishment and flavor . . . strong and always appetizingly uniform in color. Non-settling too! It mixes easier, tastes better, sells faster—more profitably! Boost chocolate milk sales this vacation. Write today for details on unusual introductory offer. ***Ask your jobber!***

BRADWAY CHOCOLATE COMPANY, NEW CASTLE, INDIANA

**Bradway Chocolate Flavored Syrup**

## HERE'S MILK HO!

*(Continued from Page 26)*

model conditions for milk production and butter and cheese making, and helped to increase the demand for the better grade articles. The light chains of the cows turned on swivels, the water being supplied by movable troughs. Rock salt was kept in a basket in each stall. The droppings fell into a gutter, and then through traps into a basement. The cows were curried, and their hoofs and legs washed daily. The whole stable was flooded and scrubbed twice a week.

### Strife in the Milkshed

In the early 80's the supplying of milk to New York City had become quite profitable and led many of the farmers to stop butter making, at which most of them were not particularly scientific, and to give up the raising of calves and pigs. This gave rise to an over-supply of milk, and a so-called milk war broke out in 1883 between the milk producers and the milk sellers in the city, over the question of whether the producers should receive 3 cents or 3½ cents for their milk. The producers held mass meetings, resolved to ship no milk, and emptied the cans of some of the farmers who tried to keep on selling. This conflict led to more milk to be turned in to the butter creameries and cheese factories, a tendency which kept up even after the dispute was settled. The situation was one in which everybody lost money, so the cooler heads soon got together and compromised on the question.

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## SWORDS INTO PLOWSHARES

*(Continued From Page 4)*

tion—which ever is later. He must finish his training by July 25, 1956.

However, if the veteran enlisted or reenlisted under the Voluntary Recruitment Act, he has up to four years from the end of his enlistment to apply for training, and nine years from the same date to complete his training.

To apply for G.I. Bill on-the-job training, the veteran first should go to his nearest VA office. He should take along a certified or photostatic copy of his discharge papers. If he is married and wants subsistence allowances, he should bring his marriage certificate. If he has more than one dependent, he should include the following evidence:

1. If he claims a minor child as additional dependent, a certified copy of the public record of birth or baptism.

2. If he claims a dependent parent, a (1) certified copy of the public record of his birth or baptism and (2) Affidavit of Dependency (VA Form 8-509), properly filled out and notarized.

The VA contact representative at the VA office will help him with the proper form. In due time—if everything is in order—he will receive a certificate of eligibility and entitlement from VA. With the certificate, he may arrange for training in an appropriate establishment.

Once a veteran starts training, it is his responsibility to meet the standards of progress set by the establishment he is attending. If he fails, his subsistence may be discontinued.

### Requirements for Disabled Trainees

A disabled veteran must meet all four of the following requirements to train on-the-job under Public Law 16:

1. Active service between September 16, 1940, and July 25, 1947.

2. A release from active service under conditions other than dishonorable.

3. A service-connected or service-aggravated disability which would entitle him to compensation.

4. VA determines that he needs vocational training to overcome his handicap.

He may train for as long as is necessary to restore his ability to work, up to a total of four years. In extraordinary cases, VA may authorize training for more than four years.

Before he begins training, he will be interviewed by trained VA counselors. They will determine whether he needs vocational rehabilitation, and will help him decide on a job or trade objective. If necessary, he will be given a series of scientific tests to disclose his aptitudes and interests.

The place of training must be an establishment under contract with VA to provide Public Law 16 training.

VA will furnish the trainee with tools and equipment, provided they are required of all other trainees taking the same course.

### VA Payments to Public Law 16 Trainees

While he is training and for two months afterwards, he may receive all or part of his subsistence allowance. He also will receive his disability compensation.

He retains whatever wages are paid him, but if his salary plus subsistence allowance exceed the wage of a beginning trained journeyman, his subsistence allowance will be reduced proportionately. His disability compensation payments will not be affected, however.

Monthly ceilings established for G.I. Bill job trainees do not apply to Public Law 16 training.

For Public Law 16 trainees, too, only wages for the standard work week are considered earned income in computing subsistence. Overtime pay is not included.

A disabled veteran may apply for Public Law 16 training at any time after his discharge or separation, but in time to complete his training by July 25, 1956.

He applies at his nearest VA office. He presents his discharge papers and, if married, his marriage certificate.

He must be eligible for disability compensation to qualify for Public Law 16 training. If he has not applied for compensation, or if he is not receiving disability retirement pay, the first thing to do is to apply for compensation, also at his VA office.

After his training begins, his progress will be checked throughout the course by a VA training officer. He must meet the establishment's standards in order to remain in training.

### Veterans in the Dairy Industry

The Milk Industry Foundation points out that the dairy field is a relatively stable one. It isn't the type of field where people are hired during prosperous times and fired during depressions.

As a result, the number of openings for new trainees is not too great. Of course, there is some turnover.

Even milk route salesmen stick to their jobs, the Foundation said. It cited as an example the fact that a salesman of 60 years old so is not an unusual phenomenom.

Several dairies in the Washington, D. C., area, however, called attention to the fact that personnel shortages exist—at least here—in specialized fields, such as pasteurizing, cheese making and machinery operations and maintenance.

Positions in dairies, the Milk Industry Foundation said, run the gamut from plant managers to accountants to automobile mechanics to chemists.

## "LOOK" Looks At Uniforms

### National Picture Magazine Devotes Four Pages to Industrial Garb — Routemen's Clothing a Popular Favorite

THE SPECIAL PROBLEMS of the milkman have been the subject of study and research in designing a uniform to fit his needs. The result, which is featured in the issue of LOOK magazine on sale June 22, is a smart, trim, comfortable outfit manufactured from sturdy cotton fabrics.

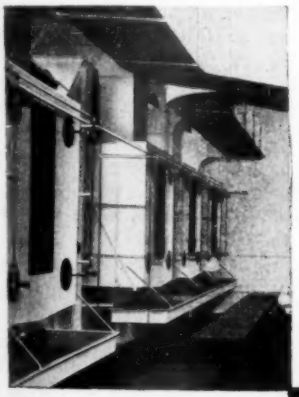
Functional work clothes, scientifically calculated to fit the job, add to safety, comfort and efficiency in many trades and professions, LOOK states in describing specially designed uniforms. Sponsored by Reeves Brothers, Inc., large Southern cotton textile manufacturers, these new workclothes designs are the product of months of research and on-the-job observation. Points of greatest strain were noted in the various job requirements, and were reinforced by seam engineering and other features calculated to lessen strain. New uniforms for workers whose jobs involve bending, reaching and lifting allow for ease of motion. The safety factor has been carefully considered, and pleats, gadgets and anything that might get caught in machinery have been avoided.

The delivery man on the milk route, whose job requires plenty of bending, stooping and carrying, and getting in and out of his car, will find that the new uniforms combine freedom of movement with a good looking appearance. The problem of collections is taken care of by a zipper back pocket to safeguard money, and a neat shoulder bag to hold the collection pad.

Other work clothes designed after studies and observations of workers in a variety of jobs include doctors' and nurses' gowns for operating room wear, a mechanic's coverall, an "assembly line smock" an overall-and-blouse uniform for the female factory worker, and uniforms for gas station attendants, bus drivers, airline attendants. Photographs of these work clothes are also featured in LOOK.

## Safe Driving Dividends

Perfect driving records for 15 consecutive years wins gold watches and diamond pins for three employees of the Brooklyn plant of the Pioneer Ice Cream Division of the Borden Company. Picture shows Howard J. Dirkes (right) president of the Pioneer Division, who made the awards congratulating drivers. In picture, (l to r), are Silvester Tideschi, service man; John J. Lawrence, district manager; Alfred R. Tomkinson, sales and delivery co-ordinator; Henry J. Mineur, Pioneer personnel director; Thomas G. Duffy, route salesman; and Dirkes. Tedeschi, Tomkinson and Duffy covered a combined total of more than 300,000 miles over the 15-year period without a single accident.



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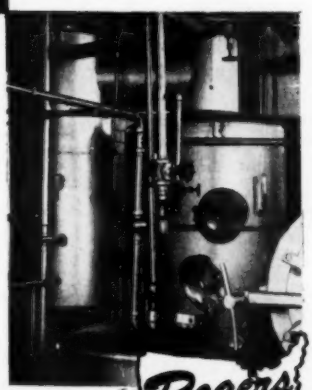

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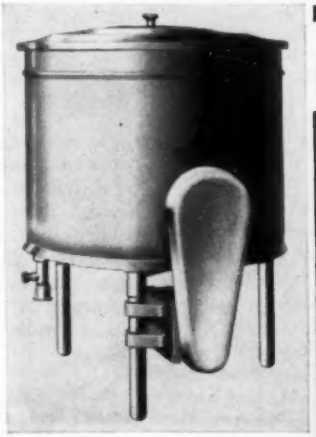

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# Borden Awards Go to Four Outstanding Dairy Scientists

**Gaines, Hood, Wise, Borland Honored For Research In Dairy Industry — Prizes Presented At Dairy Association Convention Held Last Month At The University of Georgia**

ATHENS, GA.—Four leaders in the field of dairy science were honored with coveted awards recently at the final sessions of the American Dairy Science Association meeting held on the campus of the University of Georgia. The men were: Dr. W. L. Gaines, professor and chief in milk production of the University of Illinois College of Agriculture, winner of the $1,000 Borden Award in Dairy Production; Dr. E. G. Hood, chief of the Division of Dairy Research under the Dairy and Cold Storage Branch of the Dominion Department of Agriculture, Ottawa, Canada, winner of the $1,000 Borden Award in Dairy Manufacturing; Dr. George H. Wise, professor of dairy husbandry, Iowa State College, winner of the American Feed Manufacturers Association $1,000 award, and Mr. Andrew A. Borland, retiring professor in charge of the Dairy Husbandry Department, Pennsylvania State College, who was presented with a certificate of Honorary Recognition and Life Membership in the American Dairy Science Association.

Dr. Gaines has been a leader in the United States of the scientific approach to the problems of milk secretion. He made numerous valuable studies which culminated in the report on the "energy basis for measuring milk yield in dairy cows." The formula he proposed for the equalization of milk yield upon the basis of the energy content of milk has gained universal acceptance throughout the world. Other studies include the measures of the efficiency of dairy cattle and the relation of body weight, and more recently, the problem of the energy-size basis of measuring milk yield.

Dr. Gaines is a native of Illinois and received his B.S. degree from the University of Illinois in 1908. He received his Ph. D degree from the University of Chicago, and since that time has been engaged in intensely productive research at the University of Illinois.

Dr. Hood has many outstanding contributions in the field of Microbiology and Chemistry of dairy products. He has made extensive studies on the surface taint of butter, surface bleach of butter, the cause and treatment of butter boxes for wood taint in storage butter and mold and yeast problems. In his cheese research he has made studies on starter problems, effect of copper on Lipase activity, development of rancid and unclean flavors, use of clarified milk in Cheddar cheesemaking and the development of "The pink test" for determining setting-time in Cheddar cheesemaking.

Dr. Hood received his Bachelor's degree from Ontario Agricultural College and his Master's and Doctor's degrees from The University of Massachusetts. In the fall of 1923 he was appointed Chief of the Division of Dairy Research under the Dairy and Cold Storage Branch of the Dominion Department of Agriculture and has been in charge of dairy research work since that time. He served as a director of the American Dairy Science Association for several years and is the first Canadian to serve in this capacity.

Dr. Wise, in his research work carried on at Iowa State College, has stressed the soybean product factors involved in the utilization of carotene and vitamin A in the dairy ration.

He is a native of South Carolina and holds degrees from Clemson Agricultural College and the University of Minnesota. Prior to joining the dairy husbandry staff of Iowa State College in 1947, Dr. Wise worked in the field of dairy production and agricultural biochemistry at the University of Minnesota, Clemson College and Kansas State College.

In honoring Mr. Borland, special reference was given to his leadership in the research project on "Input and Output Relationships in Milk Production" which he conducted in cooperation with the U.S. Department of Agriculture. Numerous outstanding contributions were attributed to Mr. Borland as a teacher and an able administrator. He served for many years in an executive capacity of the American Dairy Science Association.

He is a native of Pennsylvania and graduated from Pennsylvania State College in 1909. He received his Master's Degree from the University of Wisconsin in 1910, and since 1919 has been professor in charge of the Dairy Husbandry Department, Pennsylvania State College.

The two-day meeting of the Dairy Science Association was attended by approximately 1,000 dairy experts from more than 40 states and six foreign countries. This meeting was the second one ever held in the South, the first having been at the University of Kentucky in 1932, and this year's attendance was the largest in the history of the organization.

Buy U. S. Bonds

### DIAMOND ALKALI PROMOTIONS

Cleveland, Ohio—Two key promotions within Diamond Alkali Company have been announced by Fred W. Fraley, Vice President in Charge of Sales. James C. Forsyth, Supervisor of Dairy Industry Sales for the past two years, has been appointed Manager, Branch Office Sales, and will be assisted by C. W. Turner, who has been named to take over Forsyth's previous duties. Both are well known among plant operators, managers, and superintendents in these industries.

Forsyth joined Diamond in 1937 as a merchandising field sales and service representative. In June, 1946, he became Supervisor of Dairy Industry Sales, in which capacity he has administered sales and service activities of the company's specialized chemicals in the dairy bottling, brewing and related industries.

In his new assignment, Forsyth will head up the extensive sales activities of Diamond branch offices in 14 key cities across the nation.

In assuming Forsyth's former duties, C. W. Turner brings to his new post benefits gained through 12 years' experience on the production and merchandising sides of the alkali business. He started with the company in 1940 as a chemist in the research laboratory of the main Diamond plant in Painesville, Ohio. A graduate of Ohio University with a B.S. degree, Turner, also 33, comes from Barberton, Ohio. He is a member of the Cleveland Dairy Technology Society and the Cleveland Dairy Mixers.

Both men are World War II officer-veterans. Forsyth entered the U. S. Army Corps of Engineers as a second Lieutenant in April, 1941, and was a lieutenant colonel upon his return to civilian life in April, 1946. He holds the Silver Star, three Bronze Stars and five battle stars from the European Theater. Turner joined the U. S. Army Coast Artillery Corps as a private in March, 1941, and was discharged as a major in 1945.

## ANNUAL CO-OP CONFERENCE

### Large Attendance Expected at 20th Meeting of American Institute of Cooperation in Late August

WITH AN EXPECTED attendance of more than 2,000 people, registrations for rooms are already rolling in for the 20th annual American Institute of Cooperation, this to be held on the University of Massachusetts campus at Amherst, August 30, 31, September 1, and 2. The A. I. C. has a membership of more than 500 farmer cooperatives. The annual meeting is devoted to discussions which will improve local services and aid officials in getting the full benefit of cooperative effort.

We have plenty of rooms available for all, says Roy E. Moser of the University, who is in charge of registrations. Most of the visitors will be housed in the modern dormitories on the campus, and the excess will be housed in the dormitories of Amherst College, which is at the other end of this little New England village.

We are anxious, of course, to have registrations in advance so we will be able to reserve as many dormitories as necessary and will be able to provide satisfactory facilities for all, Moser stated.

On our own campus we have set aside six university dormitories. In three of these the delegates will have their own eating facilities. Other delegates will eat at the university cafeteria. Maid service, bed linen, towels, and soap will be provided to dormitory occupants—all for the sum of $2 per person per night.

Delegates who are bringing their wives and children should certainly register in advance, says Moser, so that we can reserve the proper rooms.

Blanks are now being printed and will be distributed within a week or ten days by institute officials and by the university. Those wishing registration blanks should request them from Mr. Moser, Stockbridge Hall, University of Massachusetts, Amherst, Mass.

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## J. I. THOMPSON NAMED

### New Jerseyite Appointed Assistant Administrator for Marketing in PMA

Washington, D. C.—Ralph S. Trigg, Administrator of the Production and Marketing Administration, announced June 3 the appointment of John I. Thompson as PMA Assistant Administrator for Marketing.

Mr. Thompson, an engineer and business executive with wide experience in directing the development of research related to food and allied industries, will assume his new duties immediately. S. R. Newell, Deputy Assistant Administrator for Marketing, who has been Acting Assistant Administrator, will continue to serve as Deputy with Mr. Thompson.

In December, 1943, Mr. Thompson founded his own engineering and research firm, John I. Thompson and Company, with headquarters in Washington, D. C. As head of this firm, Mr. Thompson has been concerned with the development of economic possibilities for various canneries, milling companies, and other food handlers and processors. This has included research projects related to transportation, warehousing, adaptation to local crops, and development of new products. Mr. Thompson will give up the active direction of the affairs of the company, as he accepts his Government position.

Born in Bellfonte, Pennsylvania, in 1907, and raised on a farm in Centre County in that state, Mr. Thompson studied civil engineering at Pennsylvania State College. He is at present a resident of Bay Head, New Jersey, and maintains a Washington home at 1411 Thirteenth St., N. W.


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From coast to coast, successful egg merchandisers are consistent users of SELF-LOCKING CUSHION EGG CARTONS. It's no secret why, because SELF-LOCKING CUSHION EGG CARTONS are more than egg cartons—they are a modern method of profitable egg *merchandising* . . . The keen, aggressive executives responsible for sales in firms such as listed below recognize this fact . . . capitalize on it!

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1. Cushioned protection against costly egg breakage.
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# Petersen New President

**Minnesota Educator Named Head of American Dairy Science Assn.—Other Officers Selected**

Columbus, Ohio—Ballots of members of the American Dairy Science Association, mailed to Secretary R. B. Stoltz at his Ohio State University headquarters here, elected Dr. G. Malcolm Trout, Michigan State College, East Lansing, Mich. as vice-president of the Association and as three-year directors, Professor H. B. Henderson, University of Georgia, Athens, Ga. and Dr. P. R. Elliker, Oregon State College, Corvallis, Ore.

PROF. W. E. PETERSEN

Former vice-president Professor W. E. Petersen, University of Minnesota St. Paul, Minn., by rules of the Association, becomes president of the organization. He was inducted into office at the Association's annual meeting held in Athens, Ga. on June 14-16.

New officers of the Association are nationally known for their assistance to producers and to manufacturers of dairy products. President Petersen graduated from the University of Minnesota and has been a pioneer in the study of physiological processes of milk secretion by dairy cows. He completed his graduate and advanced degrees at the University of Minnesota.

Vice-president G. Malcolm Trout, professor of dairying at Michigan State College, received his undergraduate work at Iowa State College and graduated in 1923. He received his advanced degrees at Cornell University and taught at West Virginia before taking a position at Michigan State.

Director H. B. Henderson is head of the Dairy Department at the University of Georgia. He graduated from the University of Tennessee in 1932 and received his Master's Degree from the University of Vermont in 1936. He is chairman of the host committee entertaining the association at their 43rd annual meeting this year.

Director Paul R. Elliker, professor of dairy bacteriology at Oregon State College, received his degrees from the University of Wisconsin in 1934, 1935, and 1937. He has taught at the University of Wisconsin, University of Maryland, Purdue University and is associate editor of the *Journal of Dairy Science* and a member of the Journal Management Committee. He is also Chairman of the A.D.S.A. Manufacturing Section this year.

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### SUSPENDS FUND PAYMENTS

Dr. C. J. Blanford, Market Administrator of the New York metropolitan milk marketing area, announced June 4 that payments to five dairy cooperatives from the milk pool's producer settlement fund had been suspended. The action, the Administrator said was in an effort to prevent an "unwarranted" decline in the price paid to dairy farmers for their milk.

Cooperatives involved are: Boonville Farms Cooperative, Inc., Booneville, N. Y.; Chateaugay Cooperative Marketing Association, Inc., Chateaugay, N. Y.; Croghan Milk Producerrs Cooperative, Inc., Croghan, N. Y.; Fort Edward Milk Producers Cooperative, Inc., Fort Edward, N. Y.; and Portville Milk Producers Cooperative, Inc., Portville, N. Y.

Dr. Blanford's move followed investigation into the uses to which the 70 cooperatives qualified to receive payments were permitting members' milk to be channeled. In the case of the five whose payments were suspended, it was found that "large quantities" of milk were being diverted to the manufacture of cheese, which brings the lowest return to producers for their milk, although, "there had been a market for classes of milk which bring higher returns to dairy farmers."

"Under New York's federal and state milk marketing order," the Administrator stated, "one of the obligations assumed by cooperatives in accepting payments from the producer settlement fund is to make certain that the milk of their members is utilized in the classes which return dairy farmers the highest prices. If cooperatives fail to do this, the only alternative the Market Administrator has is to suspend their payments."

The action, previously threatened, has brought strong protest from many dairy groups.

# Dr. J. A. Nelson Named

**Prominent Dairy Educator Appointed Dean of Montana State College Graduate Division from July 1**

Bozeman, Mont.—Dr. J. A. Nelson, member of the Montana State College faculty since 1922, has been named Dean of the Graduate Division starting July 1, President R. R. Renne has announced.

DR. J. A. NELSON

During his 26 years of service here, Dr. Nelson has started the Dairy Industry Department, expanded it to include dairy production as well as dairy manufacturing, and has taught classes in all phases of dairy manufacturing. He has worked with the graduate committee here since its formation 16 years ago and became chairman last year. Graduates from his department today are in top teaching positions, in important research work and hold responsible positions in the commercial dairy field. His department grants M.S. degrees.

The new Dean was born on a dairy farm in Dubuque county, Ia. He finished high school at Epworth, Ia. then entered Iowa State College where he earned three degrees. He completed his B.S. degree in dairy industry the winter of 1922. He started work immediately for the M.S. degree in dairy bacteriology. He completed this work the summer of 1923. By taking a leave of absence for 15 months and doing some work while at Montana State College, Dr. Nelson earned his Ph.D. degree in dairy bacteriology and chemistry in 1932.

**Started in Animal Husbandry**

Dr. Nelson's first appointment at Montana State was instructor in animal husbandry. In 1924 he was promoted to

assistant professor and in 1927 to associate professor. In 1929 he was made head of the newly-formed Dairy Industry Department.

Dr. Nelson originated the dairy industry short courses which so many Montanans have attended, starting in 1933. As a result of his work with these courses he has been called to many of the neighboring states as a guest instructor at similar short courses.

Dr. Nelson started dairy industry research in 1938. He introduced and has taught the course in dairy bacteriology in the science division here since 1932 and inaugurated the first dairy manufacturing extension work in 1924.

**Active in Many Dairy Fields**

Dr. Nelson is the co-author of a textbook on judging dairy products and is author and co-author of many scientific bulletins and papers.

Since he became a member of the American Dairy Science Association in 1922, Dr. Nelson has played an important part in its affairs. He was chairman of the western division in 1938-39, director of the national association from 1936 to 1939, was elected vice president of the national association for 1944-45 and elevated to the presidency the next year. He also has served on many national committees of the association, among them the accrediting committee.

Dr. Nelson helped organize the American Dairy Association, is now a member of the executive committee, and is serving on the research committee of that association.

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## SCIENCE TACKLES EPIZOOTIC

*(Continued from Page 36)*

2. that epizootic outbreaks can be isolated by systematic vaccination of the exposed stock, i.e. by a general vaccination, combined with measures of the veterinary police, and can in this manner be extinguished.

Here we must repeat over again that the quarantine measures of the veterinary police must be carried out most thoroughly. Furthermore, vaccination also can only be successful if reliable and early reports of outbreaks of the disease are ensured.

The reasons why such outbreaks cannot be efficiently suppressed by vaccination alone are:

1. The virus of Foot-and-Mouth Disease is extremely contagious, and
2. after vaccination at least 12 days are needed for the development of immunity.

As has been shown, vaccination is most effective when combined with the slaughtering of animals, suffering from Foot-and-Mouth Disease. Since active immunization was started, the following system of combating this disease is practiced in Switzerland:

1. Immediate slaughtering of the infected animals.
2. Vaccination of the exposed cattle stock, i.e. of those animals who are suspected of having had any contact with the centre of infection (general vaccination).
3. Immediate disinfection of the infected and exposed farms.
4. Quarantine measures against the traffic of persons, animals and animal products.

By this system all outbreaks of the disease were limited to their primary origin. This method consists—popularly speaking—in encircling the enemy and making him innocuous. Besides this, the danger of importing the disease from foreign countries can be neutralized most effectually by setting up barriers along the frontiers, i.e. by periodical prophylactic vaccination of the cattle stock in the zones that are threatened. The entire system would, without doubt, hold good in every other country, while differing local conditions would naturally be taken into account. A description of all the modifications, that may have to be considered, would go beyond the limits of this paper.


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**SPARKLER Horizontal Plate FILTERS**

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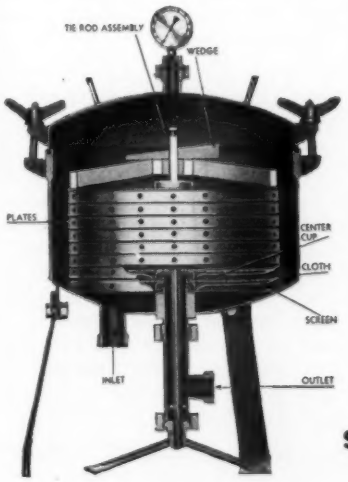
1. **Sanitation**—because Sparkler filters have all parts made of rolled, stainless steel, easily accessible for cleaning, with no internal threads, no castings, they offer the utmost in sanitary design.

2. **Production Efficiency**—because the filter medium is supported evenly on a horizontal plane by Sparkler stainless steel horizontal plates, filtration takes place uniformly over entire filtering area. *This means high flow rates.* The smallest particles, light or heavy, are removed. There is ample run-off space for filtered milk, yet the compact construction uses exceptionally small space.

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**Construction and Design Features**

1. Larger filtering area for continuous operation.
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3. Inexpensive, disposable filter medium — prevents blanketing.
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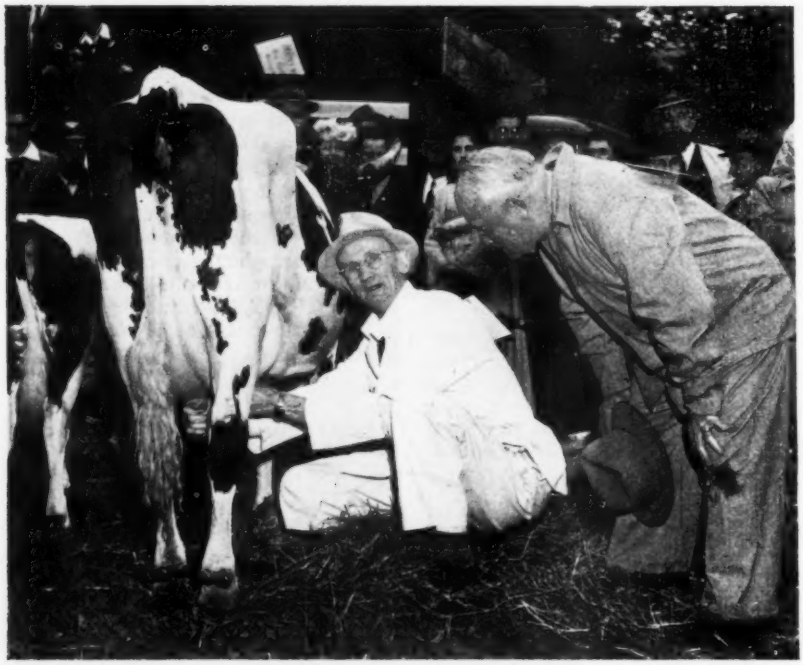

In a historic setting near the Boston State House, Massachusett's team captain, State Senator Charles W. Olsen of Ashland, looks over an Ayrshire cow, while State Representative W. Arthur Simpson, Montpelier, Vt., looks on, just prior to the starting of the interstate Vermont-Massachusetts milking contest on Boston Common, June 12. The event featured an exhibit of dairy cattle and the 12th annual observance of June Dairy month.

### NOVA SCOTIA ASSOCIATION

Halifax, Nova Scotia—The fifth annual meeting of the Nova Scotia Milk and Cream Producers' Association was held at the Agricultural College in Truro recently, with representatives from all over the province attending. President L. R. Rose, of Oakfield, N.S., was in the chair.

A vote of thanks for their four years' service was extended to the retiring officers, L. R. Rose and V. B. Leonard, of Clarence, N. S. Members discussed the question of administration of the dairy industry the Nova Scotia Board of Public Utilities and the price structure generally.

It was agreed that the price received for milk is inadequate in view of the continued increasing costs. The Association's objectives for 1948 are: 1. Expansion of membership by means of the check-off wherever possible. 2. A program to educate producers and lay the groundwork for the inclusion of dairy products within a Marketing Act. 3. A program of publicity to educate the public in the value of milk from a nutritional standpoint.

A large proportion of the general public consider that the price of milk is too high, although health authorities agree that its food value is equivalent to many foods at two or three times the price. Today, children are suffering from nutritional deficiencies because of public misconceptions about the value of dairy products and their place in the family diet.

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### THIRTEEN DAIRIES GUILTY

Hamilton, Ontario—Although the case of 13 Hamilton and district dairies charged with a breach of the Milk Control Act was disposed of in local police court this week with convictions and suspended sentences, the important question of whether the dairies would be compelled to repay the producers for the difference in the price of milk from Dec. 12, 1947, to January 1 remained in the air today.

Presumably, this will be up to the Milk Control Board, but in any case, no information was available here on this aspect of the issue.

In his judgment, Magistrate Beamer Hopkins said, "the award must be construed strictly and since there was no later date named in the award which was dated Dec. 12, 1947, and the majority after signing the award considered their duties at an end, I have no alternative to finding on the evidence that Dec. 12, 1947, is the filing and effective date of the award and accordingly find the accused guilty of the charge."

Each of the accused dairies was assessed court costs of $12.75. Walter Tuchtiek, of Hamilton, who was associated with Arthur Slaght, K.C., of Toronto in defense of the dairies, said an appeal was being considered.

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### MORE MILK PER HOUR

*(Continued from Page 12)*

tives. It is also most prominent among farmers' requests for help.

Most of the dairy barns in the northeast were built before the technical knowledge of the last 25 to 30 years was developed. The barns are out of date. Also, cows in herds are bigger on the average than they were when present barns were built. Dairymen have improved their herds and now have higher producing and larger cows. They need larger quarters than the old herds for comfort to produce at maximum.

There has been little building or remodeling for at least 15 years—between the depression and the war. Many barns need to be remodeled or replaced.

Equipment and labor costs are high. Stable construction is a long-time proposition, and must be planned carefully to serve well for many years. Farmers need assistance to make needed changes, and to decide what changes are economical under present construction conditions. Even though costs are high, some farmers feel that they must repair, remodel, or build soon to save present buildings. Others feel the changes will save labor, save injuries to cows, or add to barn capacity enough to more than return the extra cost of building now.

#### Program Organization

Against the divided problem, the Dairy Barn Management Program matches a united front of all available forces for solving the problem. The work of all groups is being coordinated, and all facilities are being used.

Most of the planning has been done by the Dairy Committee of the College of Agriculture at Cornell, which coordinates the work of college specialists with dairymen through county agricultural agents. The points for emphasis were based on requests from dairymen and from county agricultural agents to meet the needs of dairymen in their counties. In drawing up the plans, the Committee consulted with agents, dairymen, and representatives of farm organizations and various groups within the dairy industry.

Under the leadership of the state and county Extension Services, all groups interested in dairying in the State are cooperating in the program. Farm organizations and businesses are taking an active part in meetings and giving individual help to dairymen, as well as contributing funds for printed letters and

other aids. The feed industry; manufacturers of milking machines, barn equipment, and milk house supplies; bankers; veterinarians; and utilities companies are among those cooperating. Other agricultural agencies are giving full support.

### Progress

The program was launched in most counties in January. This spring several hundred New York dairymen have taken to pencil and drawing paper to work out plans for remodeling or rearranging their barns. There is plenty of help available.

Some dairymen are working out plans on their own with the help of the Dairy Barn Management Service Letters and Cornell bulletins; most are doing their planning in meetings where they can talk over possible changes with other dairymen and agricultural engineers. Dairymen are attending barn meetings also to see construction already under way or completed, to discuss methods of rearrangement.

Meetings have been held throughout the state with equipment suppliers, utilities representatives, and other groups who will be working direct with farmers on construction problems. This coordination of all groups working with farmers is designed to give them the best possible help on their problems.

### Letters

Printed service letters have already gone out to more than 65,000 New York dairymen on planning rearrangement, working out detailed dimensions, specific construction problems. Others are in preparation on labor-saving equipment and methods and on ventilation. All of these give special emphasis to the changes that will provide arrangement and equipment for labor-saving methods, save injuries to cows to prevent mastitis, and allow efficient handling of milk to get high quality.

### THOMPSON IS APPOINTED

Ralph S. Trigg, Administrator of the Production and Marketing Administration, today announced the appointment of John I. Thompson as PMA Assistant Administrator for Marketing.

Mr. Thompson, an engineer and business executive with wide experience in directing the development of research related to food and allied industries, will assume his new duties immediately. S. R. Newell, Deputy Assistant Administrator for Marketing, who has been Acting Assistant Administrator, will continue to serve as Deputy with Mr. Thompson.

The letters give detailed information and drawings on such points as desirable barn and stall dimensions; convenient locations for feed rooms and equipment; types of construction materials; and care of equipment. They refer dairymen to bulletins and other publications for complete details on such major construction problems as ventilation systems and feed carts.

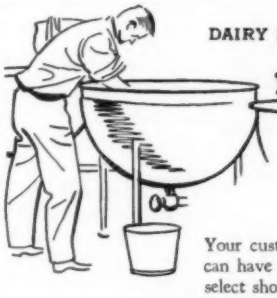
All of these materials are made available to every dairyman in the State, as well as to all field men who work with dairymen on any related problems, through the county agricultural agents.

In addition to service letters and meetings, information is being presented through news and radio releases and magazine stories, as well as by direct contact.

### Plans

Next phase of the program which will come up for coordinated effort by all groups and through all available media will be improving milk quality. This part of the program will be given concentrated attention during the summer and early fall, so that farmers can make changes before beginning of the barn feeding season, when most difficulties develop.

Next winter's program will give special emphasis to mastitis control.



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*Your customers need*
**PITTCIDE**

Your customers need a bactericide in which they can have confidence . . . and the bactericide they select should be convenient and economical to use. Pittcide meets every requirement . . . it enables the proved germicidal powers of chlorine to be used . . . it is granular and free flowing, easy to use . . . Pittcide is economical, a single 1¾ lb. bottle makes 500 gal. of 200 p.p.m. solution. You'll find Pittcide an ideal answer to your customers' sanitation problems. Send for information on use and how to furnish your trade with Pittcide.

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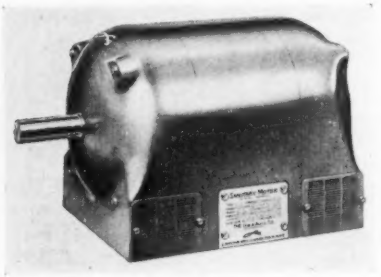
# USING OUR SEPARATOR • ITEMS OF INTEREST SKIMMED FROM HERE AND THERE

### *New Sanitary Motor*

THE LOUIS ALLIS CO., Milwaukee, Wis., has developed and is now in production on a Sanitary Motor for use in Dairies, Food Process, Canning and Beverage plants. This new design of motor incorporates a number of novel features which will materially improve the average machinery installation in any type of manufacturing plant where Sanitation is essential.



The motor is streamlined and free of cracks, recesses or depressions where milk or food products can collect. Smaller ratings will be supplied in the totally enclosed, non-ventilated construction which prevents the entrance of vermin into the motor when it is shut down for the day. Larger ratings are splash-proof and will be supplied with removable stainless steel grille plates over the cooling air inlets and outlets, also making it vermin-proof. All sizes can be washed down to insure maximum sanitation.

One of the outstanding features of this Sanitary Motor is the base construction. The entire base is enclosed by the motor housing which is finished to a flat surface. This prevents the collection of milk or food particles under the motor which is one of the biggest objections to the use of the conventional foot mounted motor in an application of this type. Mounting bolt holes are located in accordance with NEMA standards permitting this motor to be completely interchangeable with motors now in use. Access to the mounting bolts is through the removable grille plates.

The base design also permits the use of a built-in conduit box, elminating the usual projecting box supplied on motors of conventional design. Conduit may be brought into the motor through the side or bottom of the motor housing, permitting the most advantageous power connection for the particular installation.

This new Saniitary Motor will be supplied with the Type C flange for pump applications and with all of the standard and special voltages, frequencies and electrical modifications that may be encountered. It is also planned to build a delux model of this motor using noncorrosive Dairy Metal or Waukesha polished to a satin finish.

For vertical shaft or flange mounted applications, a round frame, non-ventilated motor of streamlined design will be, supplied with a conduit box built into the end bracket of the motor.

For further information write the American Milk Review.

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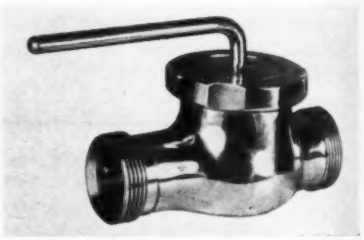
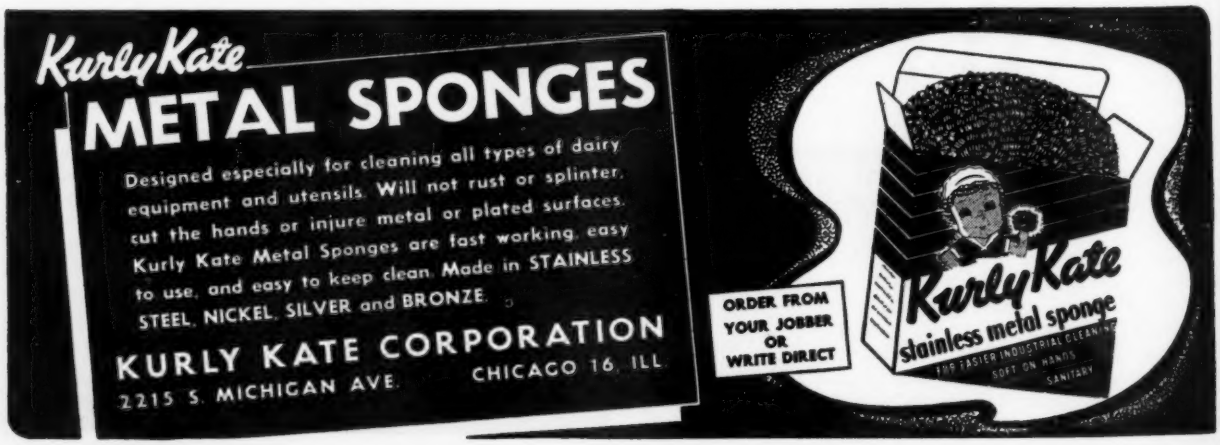
### *Sanitary Valves*

TRI-CLOVER MACHINE CO., Kenosha, Wisconsin, has designed two types of stainless steel valves for use in dairy, food, and beverage industries, or wherever a high degree of sanitation is required.

The first is a lift-type plug valve in which the problems of leakage and difficult operation are said to be overcome. The valve plug is "cracked" open when the plug is unseated by a downward or upward pressure on the handle working against a circular spring plate under the valve body. The constant holding pressure of the spring plate prevents leakage by keeping the valve securely seated at all times. Both 2-way and 3-way types are being produced in stainless steel, in 1", 1½" and 2" sizes.



The second, an eccentric valve incorporating an entirely new operating principle, is claimed by the manufacturer to eliminate the possibility of seizing and galling while being opened or closed. Simple but rugged in construction, this quick operating, in-the-line valve is said to offer design features not previously available in a sanitary type valve. One of these features allows operation in a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METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL, SILVER and BRONZE.
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FOR FASTER INDUSTRIAL CLEANING
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throttled position by merely tightening the nut in the valve which keeps the operating handle and mechanism in desired position. Sizes of 1", 1½" and 2" are now available in stainless steel.

Both of these new valves offer ease of operation; simple, fast cleaning; and complete sanitation. Further details may be had by addressing the manufacturer.

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### *General Purpose Hand Truck*

A LIGHT-WEIGHT, general purpose hand truck is now available from General Scientific Equipment Company, Philadelphia 32, Pa.

According to the manufacturer, the outstanding feature of this hand truck

is the two chime hooks, which are adjustable, to lock barrels and kegs of different heights securely in position. Truck is finely balanced so that most of the load is carried on the wheels, thus making it easy to use and handle.

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### *Shipping Containers*

NEW SHIPPING CONTAINERS for foods, made of a thermoplastic material and insulated with light weight plastic foam, have been jointly developed by United States Rubber Company and R. H. Bishop Company of Champaign, Illinois. They are now being produced by the Bishop Company.

The bottom, sides, lid, inner container and all internal bracing in the food shippers are constructed of the rubber company's Versalite, which is non-corrosive, has very low heat conductivity and is lighter in weight than any other known material suitable for this application. Important features of the thermoplastic material are high impact strength and a specific gravity of less than 1.1. All connections and seams in the containers are plastic welded.

The shipping containers are insulated with Flotofoam, a plastic foam that weighs less than one pound per cubic foot. Because of its insulating properties, the walls of the shippers can be made thinner than usual, thus increasing the storage capacity.

Temperature inside stays even during transit, since heat and moisture transfer is practically eliminated through the use of a special lid seal of cushioned synthetic sponge rubber. The handle, latches and skid strips are made of metal.

One container, primarily designed for shipment of frozen foods with dry ice, has a maximum storage capacity of 4.66 cubic feet. Another, primarily designed for shipment of fresh foods with water ice, has a maximum storage capacity of 7.44 cubic feet. Weight of each, when it is empty, is only about 75 pounds. In some cases, shipment of chilled or frozen foods can be made without the use of dry or water ice.

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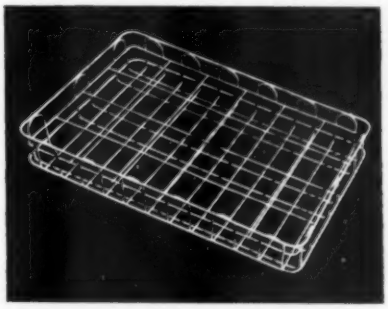
### *"Recold" Bulletin*

THE LATEST ISSUE of the *"Recold Record,"* Refrigerating Engineering, Inc. of Los Angeles, Calif., gives a picture of some of the most recent large installations of the refrigerating equipment manufactured and distributed under its "Recold" brand.

The bulletin details the various types of the concern's units installed in Von's Grocery at Los Angeles, which has lately opened one of the world's largest supermarkets for foodstuffs. This huge retail store is completely equipped with various types of Recold refrigerating units.

### *Sample Jar Tray*

CHERRY-BURRELL CORPORATION branches are now distributing a new type sample jar tray, called the "Wiremaster," which is claimed to be stronger and superior in



appearance to others now on the market. These new trays are made for either 24 two-ounce or four-ounce sample jars.

An individual compartment is provided for each jar. The trays are made of welded heavy wire and then given a heavy chromium plating. The trays have more welds per unit of area than older type trays and the heavy chrome plating provides maximum corrosion resistance.

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### *Booklet on Paint*

MAINTENANCE STAFFS in the dairy industry will benefit from the first booklet of an American-Marietta Company series of charted guides to answer painting questions in each of ten industries.

Main feature of the Dairy Industry folder is a chart giving correct primers and finish costs for every conceivable use in dairies.

Considering a number of influencing factors, the American-Marietta chart carefully plots for each use not only the primers and finish costs but it also lists the characteristics of each product recommended—together with the best type


**FOR A DEPENDABLE SOURCE OF HIGH QUALITY DAIRY PRODUCTS, CALL US.**

MILK
FRESH CREAM
FROZEN CREAM
SOUR CREAM
COTTAGE CHEESE
FARMERS CHEESE
POT CHEESE
BUTTER
BUTTERMILK
DRIED SKIM MILK SOLIDS
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PLANTS AT:

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of thinner for one-coat, two coats, and spray application.

Conditions peculiar to the dairy industry are taken into consideration. For instance, compressors, motors, conveyors and other machinery must be ready and serviceable at all times. Oil, heat, abrasion, lactic acid and water are constant enemies to the painted and enameled surfaces of this equipment. Furthermore, maintenance of walls and equipment must be planned in such a way that interference with processing is minimized. Paints engineered for the special needs of the dairy industry make maintenance easier . . . according to the paint company's theory.

●

### *Bridge Ramp*

PALLET ENGINEERING CO. of San Francisco, Cal., has announced a new PENCO Magnesium Safety Type Bridge Ramp, and lists a few of

the incorporated valuable features contained in these units: Positive locking device; wide range adjustment; side guards to prevent accidents; diamond safety plate, (non-skid) crowned for various levels; beveled entrance edges for easy entrance; light weight; easily placed on locked in position; easily removed; easily transported; car door or truck stops; heavy side and center trusses; and many other features.

Descriptive engineering bulletin No. 475 is available upon request to the company at its offices, 725 Second Street, San Francisco 7.

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### *Safety on Handi-Square*

PICTURED HERE IS one of a number of new Applied Color Lettering designs on SAFETY for Handi-Square milk bottles that are now being offered to dairies by Owens-Illinois Glass Company. Designs shown are for use on tall half-pint size and can be enlarged

for other handi-square containers. These ACL designs are easily read and tell their story of safety and health at a glance. Adaptations of the same designs are also available for the squat half-pint bottle. The appeal of Applied Color Lettering is COLOR that is fused right with the glass container in a permanent sales message.

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### *New Cleaning Technique*

A new development in the cleaning and sanitizing methods employed in dairy and food plants has been announced by Klenzade Products, Inc., Beloit, Wisconsin. Perfected in the Klenzade laboratories, the new method called "The Alternate Method of Cleaning" has proved sound in practice as well as in theory.

Laboratory development was followed by thorough field testing in various parts of the country and under various and most trying conditions. In all cases, results were successful.

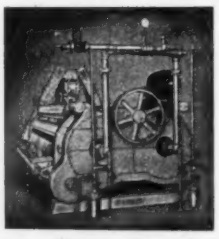
The Alternate Method of Cleaning was one of the feature topics discussed at the recent Educational Seminar conducted by the Klenzade Company at Lake Lawn Hotel, Delevan, Wisconsin. More than 500 scientists, health authorities, dairy and food sanitation technicians from all parts of the United States and Canada attended this special session to learn at first hand the method employed and the results that can be expected through the use of the Alternate Method of Cleaning. Cleaning products removes fats, greases and heavy deposits, but may not always control lime-stone and stains. Organic acid products are very excellent for removing and preventing lime deposits, stains, milk-stone and hard water precipitates. The Klenzade Alternate Method of Cleaning is just what the name implies: The use of an alkaline cleaner for three days for any prescribed cleaning task—then on the fourth day using an organic acid cleaner. It's as simple as that—3 days alkali—1 day organic acid. This procedure will really keep equipment spotless and sanitary.

For further information write direct to Klenzade Products, Inc., Beloit, Wisconsin.

**NEW PRICE INVESTIGATION**

According to newspaper accounts, a Federal Grand Jury will soon begin an investigation into milk pricing in the Cincinnati area, based upon a preliminary study made recently by representatives of the Department of Justice anti-trust division.


**Better DRY MILK**



**AT LOWER COST**

**DRY MILK MACHINES**

**Built in Five Sizes**

The patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs.

*Complete details upon request.*

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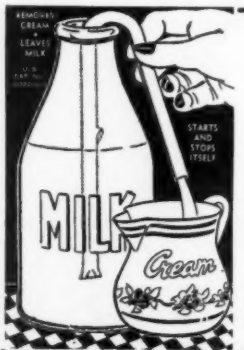


**NEW — INTERESTING — USEFUL**

MAGIC CREAM SIPHONS, for home use, remove cream from bottled milk, for use with coffee, cereals and desserts.

**PLEASE OLD CUSTOMERS—WIN NEW FRIENDS**

Leading dairy firms find Magic Cream Siphons a welcome sales booster aid. Housewives appreciate them and homes using a cream remover will consume more milk, when convinced by experience that many dishes are improved by the liberal use of milk instead of water in cooking. Free sample, for round or square bottles. Two models are made.

$15.00 per gross-$100.00 per 1000

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## DR. E. S. GUTHRIE RETIRES

### Eminent Cornell Dairy Scientist was Leader in Attack on Oxidized Flavors — Will Continue Research

ITHACA, N. Y.—After 40 years of research on the maintenance of fresh flavors in milk and milk products, which have earned him an international reputation as an authority on milk sanitation and the manufacture of butter, Dr. E. S. Guthrie, professor of dairy

DR. E. S. GUTHRIE

industry at the New York State College of Agriculture at Cornell University retired on June 30.

A native of Coin, Iowa, he received his B.S.A. degree from Iowa State College and served as an instructor at the Ohio State Univ. for three years after which he went to Cornell University and received his Ph.D. and appointment as professor there in 1913.

With Drs. P. F. Sharp and H. B. Hand, Guthrie succeeded in preventing the oxidized flavors in milk by eliminating the oxygen from milk. Later, he and Dr. V. N. Krukovsky discovered that vitamin C is the key factor in the development of these flavors. Research is being conducted on a process to deplete the vitamin C from milk which is expected to have a wider use and to be less expensive than eliminating oxygen.

His most important writings are concerned with the rancidity of butter, butter sampling methods, print butter shrinkage, effect of the hydrogen ion concentration in churning time of cream, protein accumulation in the foam of skimmilk, and ascorbic acid oxidation in milk. As with his research, most of his writing has been in cooperation with other scientists.

Dr. Guthrie helped found the American Dairy Science Association in 1906 of which he was national president in 1939-1940, and is a member of Sigma Xi and the American Association for the Advancement of Science.

Dr. Guthrie will continue his research work on oxidized flavors of dairy products.

## EMPCA ANNUAL MEETING

The Eastern Milk Producers Cooperative Association held its annual meeting June 1st and 2nd in Syracuse with the largest attendance in the history of the association. Reports of the officers of the Association and General Manager, Russell E. Spaulding highlighted the principal achievements since the new program began taking shape two years ago.

As reported to the annual meeting, these are among the results already realized:

1. Force of field men who call on the individual members besides check testing samples, weights, etc. and to bring about a better informed membership.
2. Installing an experienced economist to supply statistical information, for use at hearings on amendments to the Federal Milk Order, five of which have been instigated during the past year by Eastern in the interest of adjustments of milk prices upward.
3. Expanded office force.
4. More emphasis on meetings in the 73 local sections of Eastern's territory which operate under their own officials including an elected delegate to the Association's "legislative body" which meets quarterly in Syracuse to make recommendations to the Board of Directors.
5. A substantial gain in membership.
6. Increase in quarantine payments from 50 to 75% for loss to members through contagious disease.
7. Modern accounting and bookkeeping system which among other things establishes the member's equity.
8. Adoption of new by-laws which have been pronounced "the best yet" for governing a cooperative.

In his annual report, President Roswell P. Kinney, strongly supported a recommendation of the General Manager that Eastern become affiliated with the National Milk Producers Federation. This recommendation was unanimously supported by the delegate body.

The following program has been approved by the Delegate Body and is expected to be implemented this year.

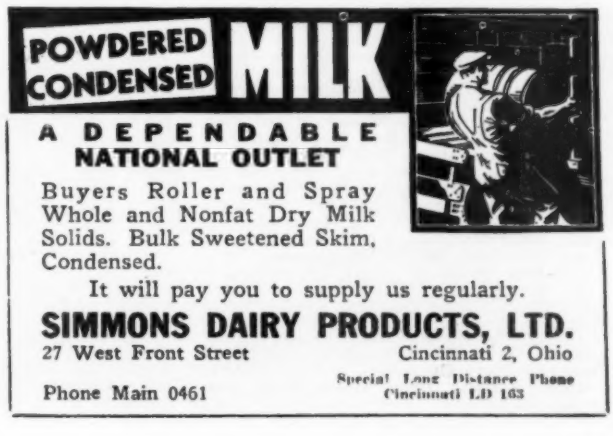
1. Establishment of one or more of its own plants.
2. A collecting and paying cooperative whereby members will receive their milk check direct from the Association.
3. New producer marketing agreement or contract between producer members and Association.

## OPEN PHILADELPHIA OFFICE

Kansas City, Kans., June 17, 1948—The Marley Company, Inc., manufacturers of cooling towers, water cooling equipment and spray nozzles, announces the opening of a new district office in Philadelphia at 1112 Packard Building. Robert M. Sharp is in charge.

Mr. Sharp recently completed a five-months' intensive training program at the home office in Kansas City in preparation for his new appointment. A native of New Jersey, Mr. Sharp has been associated with cooling tower manufacturers several years. He received his B.S. in electrical engineering from Rutgers University, and his M.S. in chemical engineering from New York University.

THE MODERN ANSWER TO Dairy SANITIZING PROBLEMS . . .
Q-Tabs
GERMICIDAL TABLETS
A new quaternary ammonium sanitizer in tablet form! Simply drop one or more Q-TABS in a measured quantity of water to make a powerful germicidal rinse for pails, strainers, milk cans, churns and other dairy equipment. Crystal clear solutions ...perfect rinsibility. Simple and economical to use.
ON SALE AT LEADING SUPPLY HOUSES or write JAMES VARLEY & SONS, Inc. 1200 SWITZER AVE. ST. LOUIS 15, MO.


POWDERED CONDENSED MILK
A DEPENDABLE NATIONAL OUTLET
Buyers Roller and Spray Whole and Nonfat Dry Milk Solids. Bulk Sweetened Skim, Condensed.
It will pay you to supply us regularly.
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Special Long Distance Phone Cincinnati LD 163

# WANTS and FOR SALES

**RATES: "Position Wanted," 50c. Limit of 50 words; 2c for each additional word. All other advertisements, 5c a word ($1.00 minimum). Keyed ads, 25c extra to cover return postage. The name and address should be included in counting the words. All payments strictly in advance. Those who answer any of the following keyed advertisements please address replies to the box number, care of American Milk Review, 175 Chambers St., New York 7, N. Y.**

## FOR SALE — EQUIPMENT

FOR SALE— 2 Rogers 6′ diameter by 14′ straight side copper Vacuum Pans, 5 double coils each; 2 Mojonnier 5½′ sides by 7′ diameter, 3 double coils and copper bottoms each, all complete with barometric leg condensers, vacuum pumps, steam headers and valves, all pans completely reconditioned good as new by Rogers' coppersmith. Also 6 Copper Hotwells; two 5′ x 5′; four 6′ high by 4′ diameter. Lock Box 215, Eau Claire, Wisconsin. 7-M

FOR SALE—One 164 can milk tank on Brockway truck—in excellent condition. Fair Lawn Dairy Farms, 5-01 River Road, Fair Lawn, N. J. 7-M-2

FOR SALE—Fluid milk plant in New York State. Up-to-date equipment. Taking in 200 cans daily. Can be built up. Box 306, care this publication. 7-M-2

Modern pasteurizing plant located in Northern Ohio, newly equipped, doing 1500 units and growing daily, also wholesale ice cream. Building, stock, supplies, equipment and modern large home. Low overhead and a quality supply of milk makes this a real deal. Books kept by a Public Accountant and are open for inspection. Price $55,000. Will carry part as mortgage. Health is reason for selling. Box 307, care this publication. 7-M

FOR SALE — One of Oregon's finest Dairies. This is a new plant located in the wealthiest section of the state. This is a new building, new equipment and all late model trucks. Handle bottle milk only. Doing $30,000 per month business. Terms may be arranged. Box 308, care this publication. 7-M

FOR SALE—One Cherry Burrell, Model C, 4 wide soaker bottle washer with atuomatic infeed and discharge to bottle conveyor. Excellent condition. Has had very good care. Price $800.00 F.O.B. Bryan, Texas. Sanitary Farm Dairies, 1802 W. Gray, Houston, Texas. 7-M

FOR SALE—1 Used Glass lined horizontal tank 6 foot diameter by 9 foot long, opening on end; 4 Used Glass lined horizontal tanks 4 foot 6 inches diameter by 10 foot 6 inches long, openings on top; 1 Used Glass lined horizontal tank 6 foot diameter by 5 foot 6 inches long, opening on end; 1 Used Glass lined horizontal tank 7 foot diameter by 7 foot long, opening on end. Tanks may be inspected at Hershey, Pa. Hershey Chocolate Corporation. 7-M

FOR SALE—One 100 gal. (tin-copper) pasteurizer without agitator or motor—$50.00; one Sturdy-Bilt four row bottle washer—$450.00; one Limex Water Softener Rectifier complete with fittings—$150.00; one Pomona Deep Well Pump 7½ H.P. motor, complete with rods and 110 foot spinner—2½ inch casing, will throw 80 gals. per minute—$500.00; 300 quart cases for round bottles @ 35c each; 300 pint cases for round bottles @ 35c each; one cheese vat—$50.00. All equipment listed is in good condition. Write Studey's Sanitary Dairy, 2425 Durand Avenue, Racine, Wisconsin. 7-M-3

FOR SALE—Specialty Brass Bottle Filler, capacity 30 qts. per minute. 2 Motors, 3 sets of cappers. Guaranteed in A-1 condition. Woolley's Dairy, Green Grove Road, Neptune, N. J. 7-M

## FOR SALE — EQUIPMENT

FOR SALE — Pasteurizer — Pfaudler — Glass Lined — 275 gallon, with agitator. Aaron Equipment Company, 1347 S. Ashland Avenue, Chicago 8, Illinois—Chesapeake 5300. 7-M

FOR SALE—One 4 x 4 York Ice Machine complete with 10 HP motor, brine cooling tank coils and agitator, 2 Centrifugal brine pumps with 2 HP motors, 430 ft. Galvanized brine coils for Milk Cooling rooms, 225 ft. ammo coils and hangers for meat freeze room. Complete with all automatic controls. Can be seen in operation. 250 gal. stainless steel lined, York Milk Cooling-holding Tank. Excellent condition. 50 gal. nickel lined Pasteurizer and Cooler-holding Tank. New Box 314, care this publication. 7-M

**Insulated Milk Truck Bodies**
for
**FARM PICK-UP**
*Write For Prices and Deliveries*
**Millington Truck Body Co., Inc.**
Millington, Mich. Huntington, Ind.
Sparta, Wisc.

FOR SALE—Milk Cooler 6 feet, tin copper with stainless cover—$300.00; No. 40 DeLaval Separator, Factory Rebuilt—$300.00; Milk Vending Machines, Ideals & Vendalls—$125.00 to $175.00; Stamsvik Junior Milk Filler — 6000 lbs.— $50.00; Dump Tank—32x38x38—$25.00. All F.O.B. Neshanic, New Jersey—Pilfour Dairy. 7-M-2

FOR SALE—One 650 gallon, Alloy Products Corp. stainless steel, oval shaped milk tank. Cork insulation. In excellent condition. Oneida Milk and Ice Cream Co., 1100 South Oneida Avenue, Rhinelander, Wisconsin. 7-M

FOR SALE—One York model 536 Heater Exchanger, shop No. 8462576, consisting of one 30 inch H.L. frame (white), two large size 2 inch connector plates, and 84 type H.L. plates. Brand new. Immediate delivery. Price $6,800.00. f.o.b. Paynesville, Minnesota. North American Creameries, Inc., 2035 Rand Tower, Minneapolis 2, Minnesota. 7-M-2

FOR SALE—One 5,000 gallon capacity Sani-35 Milk Storage Tank, 12 gauge stainless steel lining, No. 4 finish, dished heads, 2 inch cork insulation, steel outer jacket, manhole, peep glass, light fixture, vent fitting, no foam inlet, 2 inch flush valve outlet, agitator, 220 volt, 3 phase, 60 cycle motor, sanitary ball feet, angle thermometer. Outside diameter 101 inches, outside overall length 20 inches. Brand new. Immediate delivery. Price $4,500.00 f.o.b. Paynesville, Minnesota. North American Creameries, Inc., 2035 Rand Tower, Minneapolis 2, Minnesota. 7-M-2

FOR SALE—The following milk equipment: 1 Vertical 10 H.P. Dutton flueless boiler, like new—price $300.00; one 3 compartment Girton Wash Tank, large, new—price $75.00, with motor; 1 DeLaval Separator No. 12, fair condition, does good work—price $65.00; 1 nearly new 5 cans cottage cheese vat—price $50.00; one 25 gal. Power Churn, in good condition—price $50.00; 1 medium size Butter Worker with 1 lb. print, like new—price $25.00. Samuel G. Kroneck, Absopure Dairy, Oneida, N. Y. 7-M

## FOR SALE — EQUIPMENT

FOR SALE—50 to 300 gallon Pasteurizers, Stainless Steel or Glass Lined; 300 gallon Wright Two Compartment S.S. Visco-Creamvat; Cherry-Burrell Super Plate Cooler, 91 s.s. plates; 7 Wing and 11 Wing Cherry-Burrell Cabinet Coolers; 5 ft. to 10 ft. Combination Direct Expansion Coolers; 8 ft. to 12 ft. Internal Tubular Coolers; 6-16, G-70, G-100, G-160 and GV20 Cherry-Burrell Nu-Line Fillers; 4, 6, 8 and 12 Wide Soaker Type Bottle Washers; Lathrop-Paulson and Creamery Package Rotary Can Washers, 3 c.p.m.; Lathrop-Paulson Straitaway Can Washer, 10 c.p.m.; No. 142 and No. 172 DeLaval "Air-Tight" Separators; 50 to 1000 gallon Homogenizers with stainless steel heads, also Bronze Head Homogenizers ranging in sizes from 100 to 450 gallons 2240 gallon Heil Stainless Steel Truck Tank; 3000 gallon Cherry-Burrell Stainless Steel Storage Tank; 400 gallon Stainless Steel and Glass Lined Insulated Tanks; 200 gallon Cherry-Burrell Stainless Steel Tanks (Univats); 36 inches and 42 inches Stainless Steel Vacuum Pans, also Copper Vacuum Pans from 36 inches to 72 inches diameter; 36 inches diameter also 58 inches by 44 inches Lathrop-Paulson Stainless Steel Weigh Cans; 250 and 500 gallon Stainless Steel Receiving Vats; Cherry-Burrell and Creamery Package Churns, 150 and 400 lbs. capacity; Doering Model "E" Butter Printer. ALL ITEMS RECONDITIONED. Write or wire your particular requirements and plan to visit our Staten Island warehouse and shop. Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, N. Y. 7-M

**REBUILT—Pasteurizers, Milk Coolers, Bottle Fillers, Ice Machines, Plate Coolers and Heaters, Homogenizers and Bottle Washers.**
**Send us your requirements.**
**Ohio Creamery Supply Company**
701 Woodland Ave. Cleveland 15, Ohio

FOR SALE—1 stainless steel Cemac No. 14 milk bottle filler and capper, variable speed capacity up to 90 quarts per minute. Perfect condition. Replaced by larger unit. New York City plant. Box 310, care this publication. 7-M

FOR SALE—Used 4M pound Stainless Steel Cheese Vat in good usable condition. Write Sauquoit Valley Dairy Co., Inc., 491 French Road, Utica 4, New York. 7-M

## FOR SALE — MISCELLANEOUS

FOR SALE—Chocolate Milk made with Bradway Non-Settling Chocolate Syrup and Powder is superior. Place your trial order now. BRADWAY CHOCOLATE COMPANY, New Castle, Ind. 7-M-t.f.

FOR SALE—Used milk bottle crates. Can deface old name and rebrand. Write or phone for present day inventory. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland, Ohio. 7-M-t.f.

## POSITION WANTED

POSITION WANTED—Dairy executive, now employed, seeks similar capacity with greater future. Office manager, accountant, credits and collections, sales promotion, personnel. Systems, records, forms. Knowledge most every office machine. Milk and milk products controls, plant records. Familiar all governmental dairy reports. Vital, young, educated, experienced, imaginative, aggressive, hardworking. Minimum salary $200.00 weekly. Box 312, care this publication. 7-M

## BUSINESS OPPORTUNITY

FOR SALE—Ice cream, butter and milk business. Established 15 years. Good location, retail store at plant, apartment above. Ice cream main business. Twenty-four ice cream cabinets and wholesale accounts. Owner retiring. Box 311, care this publication. 7-M

## WANTED

WANTED—Milk plant or cheese factory with room for expansion. Send complete information and best price in first letter. Box 309, care this publication. 7-M

WANTED—Fresh Bakers Cheese, Eastern Seaboard. October First to April Thirtieth. P. O. Box 651, New York 7, N. Y. 7-M

**WANTED — Filler for sweetened condensed milk 14 oz. can 300 x 303. Capacity 60 CPM up. Also want can closer. Box 313, care this publication. 7-M**

WANTED—Milk dryer 36 (thirty-six) inches and over. Stainless steel rolls preferred. Please give us full particulars. Home Creamery Co., 92 Perth Street, Guelph, Ontario, Canada. 7-M

WANTED—Skim milk or whole milk, year round, within 350 miles New York. Plant must have facilities for cheese making or will contract with plant to make farmers and pot cheese. Will supply boxes, wrappers, cans, etc. Box 315, care this publication. 7-M

## ICE MAKERS

Self contained semi-portable complete Ice Plants in capacities from 250 to 2000 lbs. per day. Provide an inexpensive and convenient source of pure block and cube ice. Gasoline or electric motor driven models available. Ideal for Fishing Trade, Institutions, Restaurants, Hotels, Dairy Farms, Fish Merchants, etc. Prompt delivery. RECO PRODUCTS DIVISION, 2020 Naudain St., Philadelphia 46, Pa. 7-M

## PLAN DRIVE FOR MILK PLANT

Norwich, Ont.—A meeting has been set for the financial drive to raise funds from the dairy farmers of the Woodstock, Tillssonburg, Burford and Norwich districts to provide for the erection of a processing plant in which the producers will supervise the processing of their own milk products. The estimated cost of the plant is in the neighborhood of $500,000.

The territory to be covered in the canvass is that covered by the four locals. It comprises a block which eastward goes to within a few miles of Brantford, southward into the northwestern and western sections of Norfolk County.

The committee has recommended that each member be required to take a maximum loan of 100 and that the average size of the loans be $300 payable in instalments is so desired.

●

## FOR THE FOURTH TIME

Winning Safety trophies is getting to be an old story to Robert I. Gayley, Safety and Medical Director at Supplee-Wills- Jones Milk Company, (Philadelphia). Mr. Gayley, center, is seen here flanked by Ted V. Rodgers, right, chairman of the Board of the American Trucking Association, and George L. Teets, Eastern Manager of the Electric Auto-Lite Company. Mr. Rodgers presented Mr. Gayley with Supplee's fourth consecutive National Truck Safety Contest trophy and the company's second consecutive National Industrial Safety Contest trophy. Mr. Teets presented Mr. Gayley the Auto-Lite Award (the traveling kit) for his work in "administering Supplee's championship Safety program." During the contest period, Supplee's 700 trucks traveled in excess of 3,500,000 miles in the Philadelphia area with an accident frequency of only 3.2 per 100,000 miles.

*"Review" Want Ads Pay*

●

## MILK FOUNDATION ELECTS

### E. W. Tiedeman Is Chosen to Lead Chicago Organization — Active in Dairy Association Work

CHICAGO, ILL.—Directors of the Milk Foundation elected E. W. Tiedeman of Appleton, Wisconsin, president at the sixteenth annual meeting held recently. Mr. Tiedeman is general manager of the Central Dairy Sales Co-op. This co-op supplies Chicago with a goodly part of its daily cream and milk supply. He is also chairman of the executive committee of the National Dairy Council and a member of many other national associations in the dairy field.

Other officers elected were: S. A. Kostakos, Honey Hill Creamery, vice president; William Perdue, Pure Milk Products Coop., vice president; L. G. Glick, Western-United Dairy Co., vice president; W. J. Swayer, Pure Milk Assn., treasurer; and O. O. Smaha, The Borden Company, secretary.

Directors for the ensuing year are: Arthur Hartman, Hampshire Milk Co., H. Stanley Wanzer, Sidney Wanzer and Sons, F. H. Kullman, Jr., Bowman Dairy Co., John Duzansky, Pure Farm Dairy Co., Roscoe Glenn, Union Ill., W. R. Schaub, Meadowmoor Dairies, Inc., B. N. Hunding, Hunding Dairy, Hyman Freed, Capitol Dairy Co., Pearl Lambert, Genoa City, George Pfeifer, Ladysmith, Wisc., Earl Whitaker, Elkhart, Ind., and A. W. Agnew, Milton Junction, Wisc.

The Milk Foundation is a non-profit organization endowed by all milk producers, handlers, and dealers serving the Chicago area. Its work covers research, educational projects on the food values of milk, and information on the economic importance of the dairy industry.


Every type dairy brush you need

Metal sponges

Aprons of rubber, plastic and oilskin

Creamery hose and rubber footwear

SAVE TIME! Consolidate Your Purchasing by Using the Complete E-Mac Line

*For Our Complete Line of Dairy Supplies Write For Catalog No. 11*

E-Mac DAIRY BRUSH CO., Reading, Pa.



Sales Service for Manufacturers of

MILK PRODUCTS

Evaporated Milk—Powdered Skim Milk — Powdered Buttermilk — Condensed Skim and Whole Milk — Powdered Whole Milk.

C. W. BURCKHALTER, Inc.

156 Franklin St. New York, N. Y.

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## OF EVENTS TO COME

**International Dairy Congress**—Twelfth international meeting will be held in Stockholm, Sweden from August 15 to 19, 1949. Enquiries concerning the congress should be addressed to XIIth International Dairy Congress, Post Box 642, Stockholm, Sweden.

**West Virginia Dairy Products Association**—Thirty-fourth annual convention, Greenbriar Hotel in White Sulphur Springs, W. Va., August 16 and 17. Secretary, John J. Slavins, 467 Chestnut St., Morgantown, W. Va.

**Minneapolis National Food Show**—Minneapolis Auditorium. Sponsored by the Minneapolis Retail Grocers' Association, September 11 through 19. Director, Norman F. Ludford, 510 Syndicate Building, Minneapolis, Minn.

**Indiana Dairy Products Association**—Annual convention will be held at the Claypool Hotel, Indianapolis, Ind., September 20-22, 1948. Executive secretary, C. C. Hadley, 622-24 Board of Trade Bldg., Indianapolis 4, Ind.

**New York State Association of Milk Sanitarians**—Annual convention, Hotel Statler, Buffalo, N. Y., September 22-24, 1948. C. S. Leete, New York State Department of Health, Albany, N. Y., Secretary.

**Wisconsin Creameries Association**—Annual Convention, Hotel Whiting, Stevens, Wis., Sept. 29, 1948., A. H. Lindow, 1 West Main St., Madison, Wis., Secretary.

**Dairy Industries Exposition**—Atlantic City, New Jersey, October 25-30, 1948. Roberts Everett, Executive Secretary, 616 Albee Bldg., Washington 9, D. C.

**International Association of Ice Cream Manufacturers**—Annual convention, Atlantic City, N. J., October 25-27, 1948. R. C. Hibben, 1105 Barr Bldg., Washington 6, D. C., Secretary.

**Milk Industry Foundation**—Annual convention, Atlantic City, N. J., October 28-30, 1948. E. B. Kellog, 1001 - 15th St., N. W., Washington, D. C., Secretary.

**Iowa Milk Dealers Association**—Annual convention will be held at the Hotel Fort Des Moines, Des Moines, Iowa, November 12 and 13, 1948. Secretary, John H. Brockway, 908 Walnut Bldg., Des Moines 9, Iowa.

**American Public Health Association**—Nov. 8-12, Boston, Mass. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, N. Y.

**Illinois Dairy Products Association**—Annual convntion will be held at the Morrison Hotel in Chicago, Ill., December 13 to 15, 1948. Secretary, M. G. Van Buskirk, 309 W Jackson Blvd., Chicago 6, Ill.

**Dairy Industry Week**, Kansas State College, Manhattan, Kansas, Feb. 22, 23, 24. Prof. T. J. Claydon, Department of Dairy Industry.

●

### DAIRY JUDGING CONTEST

The 4-H Dairy Judging Contest at the Minnesota State Fair, August 28-September 6th, will be sponsored again this year by Land O' Lakes Creameries, Inc., which has announced that it will arrange transportation to the Fair of the winning judging teams from every county competition in the state.

This will be the second year of Land O' Lakes' sponsorship of the event. Teams from 27 counties were represented in the judging in 1947. Previously, the 4-H teams coming to the Fair had to arrange their own transportation.

In announcing the decision to be host at the State Fair event again this year, John Dysart, public relations director of Land O' Lakes, commended the 4-H clubs for their excellent job in training boys and girls in home-making, farming and in community leadership.

"The dairy judging contest at the Fair," he said, "provides an opportunity not only in judging but in good dairy practices."

Land O' Lakes will also present a new award of $25 to a 4-H club member in each county where the grand champion has been sired by one of the bulls from the central bull stud of the Land O' Lakes Herd Improvement Division.

Annual awards to outstanding 4-H clubs in Wisconsin and North Dakota are also made by Land O' Lakes in its program of encouragement to the farm youth organization.

●

### MILK ON THE GREAT LAKES

*(Continued from Page 20)*

however, Buffalo made navigation history when the ice-breaker, the Mackinaw, opened a road through the ice and allowed some 12 large freighters to leave port days earlier than is usually possible. The success of this undertaking has interested Buffalo shippers to the extent that there is now agitation for a Buffalo owned ice-breaker.

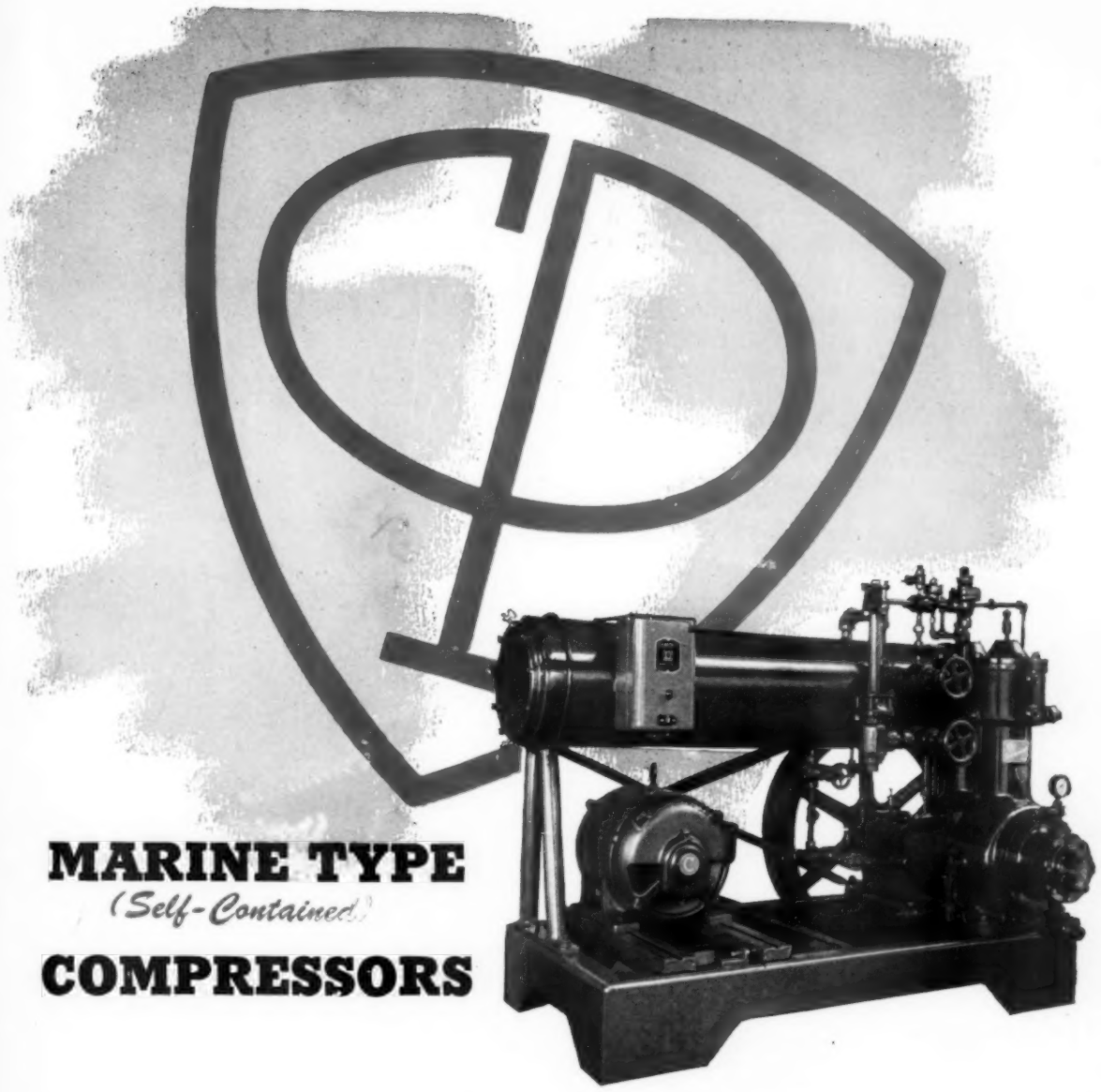
The crews of these boats, many of whom have sailed for years, know little life outside of that offered on the boats. This is their home. During the winters some work at land jobs, many just enjoy the time with their families, while others live in the many seamen's homes established in every port city.

On every large freighter laid up for the winter in harbor a keeper must be on hand for the protection and maintenance of the ship. Sometimes a member or two of the crew stay on for this purpose, but more often a man and his family live comfortably and well on the big ship during the cold months. Supplies needed for these people are deliv- a large part of these orders.
ered regularly. Dairy products are again

Another customer for the marine supply house is sometimes the light house keeper. Many of these keepers now go back and forth by launch and have as regular hours as any worker, but there are still keepers who could slip back into the tales of glamor and adventure related of these men, where they, perhaps with their families, live the year round at the light and to whom supplies are delivered in much the same way as to the big boats serviced in mid-lake. Also, as to the boats, dairy products head the lists of food supplies.



XUM



# MARINE TYPE
*(Self-Contained)*
# COMPRESSORS

If you need a compact, efficient refrigerating unit, in a capacity range of 6 to 8½ tons, you'll welcome the news that CP 5 x 5 Marine Type Self-Contained Compressors are now available for reasonably prompt delivery.

This unit—designed and built by an organization that has specialized in the development of dairy and food processing machinery for more than 60 years—consists of a CP Vertical Compressor with 5 x 5 inch twin cylinders cast enbloc. All accessories such as stop valve, suction scale trap, oil level gauge, relief valve, and high and low pressure ammonia gauge, automatic water regulating valve and high pressure cutout are included. Furnished for either hand or automatic control. Write for Bulletin V-99, and delivery dates.

THE *Creamery Package* MFG. COMPANY

**General and Export Offices: 1243 W. Washington Blvd., Chicago 7, Illinois**

Atlanta • Boston • Buffalo • Chicago • Dallas • Denver • Houston • Kansas City, Mo. • Los Angeles • Minneapolis • Nashville • New York • Omaha • Philadelphia • Portland, Ore. • St. Louis • Salt Lake City • San Francisco • Seattle • Toledo, Ohio • Waterloo, Ia.

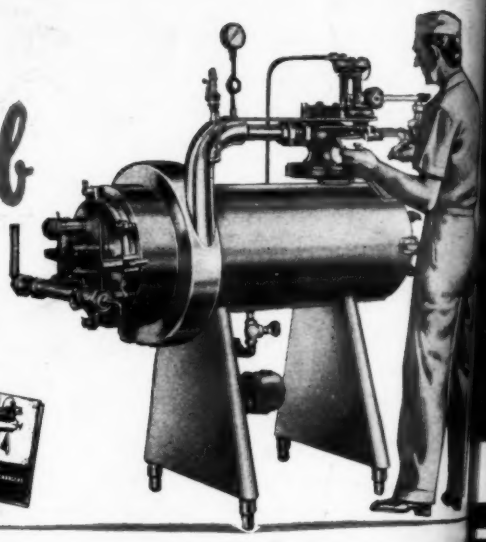
CREAMERY PACKAGE MFG. CO. OF CANADA, LTD.
267 King St., West, Toronto 2, Ontario

THE CREAMERY PACKAGE MFG. COMPANY, LTD.
Avery House, Clerkenwell Green, London, England

DAIRY & FOOD PROCESSING EQUIPMENT • SUPPLIES • REFRIGERATION

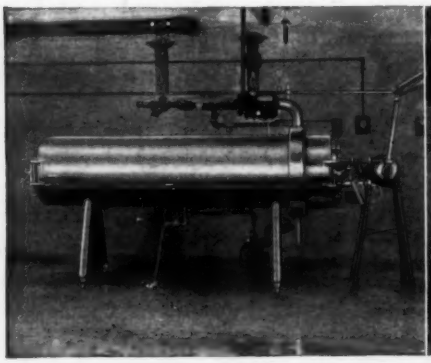
# Mojonnier Tubular Heat Exchangers

# Simplify every milk processing job



Whether Pasteurizing, Separating, Pre-heating, Butter Making, Condensing, Evaporating or making Powdered Milk, you'll find a Mojonnier Tubular Heat Exchanger of exact size and capacity, engineered to your specific needs. Thousands of these streamlined units are giving dairymen all over the world a new, modern standard in heating efficiency. Bulletin 164, carrying the complete, illustrated story of the Mojonnier Tubular Heat Exchanger, is ready for you . . . send for your copy today.

MOJONNIER BROS. CO. • 4601 WEST OHIO ST. • CHICAGO 44, ILLINOIS

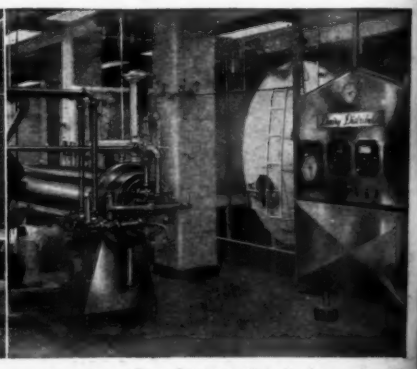


Mojonnier Tubular Heat Exchanger preheating fresh milk in manufacture of condensed milk, ice cream mix and powdered milk.

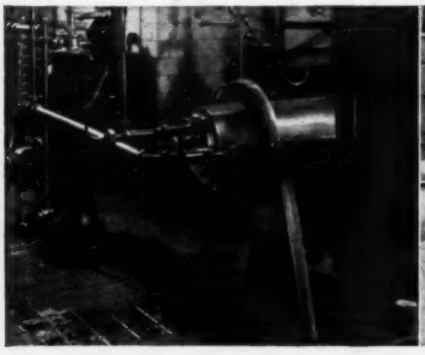
**Condensing Milk**

Preheating milk ahead of hot wells in condensed milk plant.

**Pasteurizing Milk**



In operation in large city milk plant heating milk from 40° to 161° F. as part of Mojonnier Short-Time System.

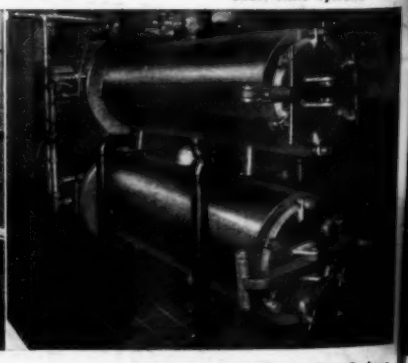


Mojonnier Tubular Heat Exchanger being used for continuous treating of 40% cream in country plant.

**Cream**

One of many Mojonnier Tubular Heat Exchangers in use heating fresh milk from 40° to 85° F. ahead of separator.

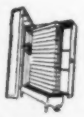
**Powdered Milk**



Two Mojonnier Tubular Heat Exchangers used for continuous preheating of milk ahead of roll dryer. One unit can be cleaned while other is operating.

**OTHER MOJONNIER ENGINEERED DAIRY EQUIPMENT USED THE WORLD OVER**

Cold-Wall and Plain Storage Tanks



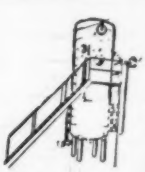
Compact Coolers (Senior, Junior)

Vacuum Fillers

Zone-Control Vats

Milk Testers

Conveyors (Bottle, Case, Can)



Vacuum Pans

Tubular Evaporators (Single, Double-Effect)